Public Utilities

Volume 60 No. 12 December 5, 1957

WHAT'S HAPPENING TO TVA?
By Everett L. Palmer

« »

Liability Insurance for the Nuclear Energy Hazard
By Richard H. Butler

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Telling the Industry's Story To Congress
By Thomas Ward Miles

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Single copies $1.00. Annual subscription price (26 issues a year): United States and possessions, $15.00; Pan American countries, $15.00; Canada, $16.00; all other countries, $17.50.

Entered as second-class matter April 29, 1915, under the Act of March 3, 1879, at the Post Office at Baltimore, Md., December 31, 1936. Copyrighted, 1957, by Public Utilities Reports, Inc. Printed in U. S. A.

Public Utilities FORTNIGHTLY

VOLUME 60 DECEMBER 5, 1957 NUMBER 12

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This article has been prepared to promote better understanding of TVA, what it is, how it has grown, and the extent and nature of the interest of the nation's taxpayers.

Liability Insurance for the Nuclear Energy Hazard .....*Richard H. Butler* 913
This article explains the general principles of the law relating to this new type of insurance.

Telling the Industry's Story to Congress .....*Thomas Ward Miles* 925
Anybody who has been called, or feels that he is likely to be called, to testify before a congressional group should read this.

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PUBLIC UTILITIES REPORTS, INC., PUBLISHERS

Executive, Editorial & Advertising Offices .....332 PENNSYLVANIA BLDG., WASHINGTON 4, D. C.
Publication Office .....CANDLER BUILDING, BALTIMORE 2, MD.
Advertising Representatives:
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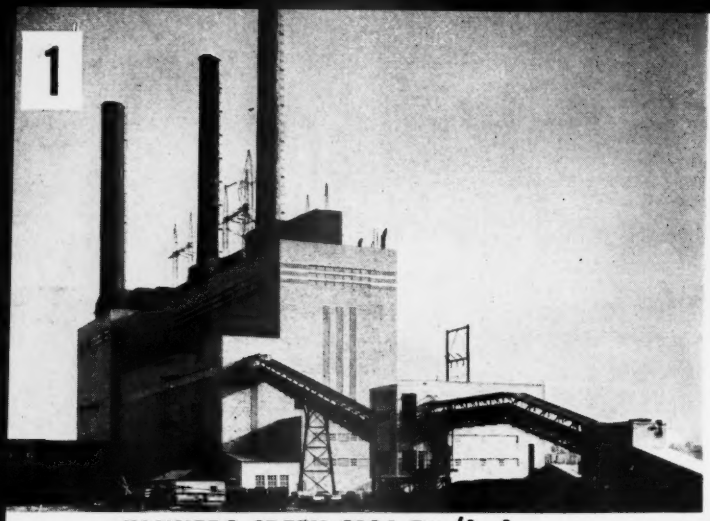

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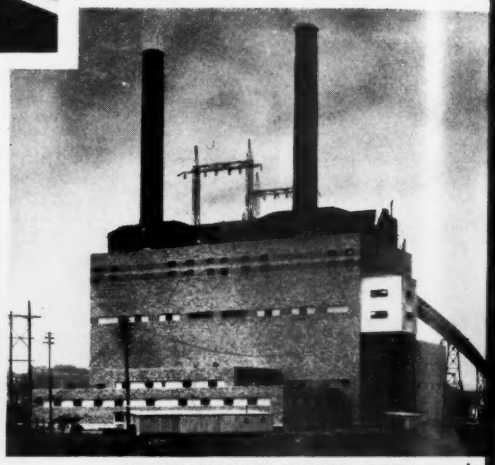

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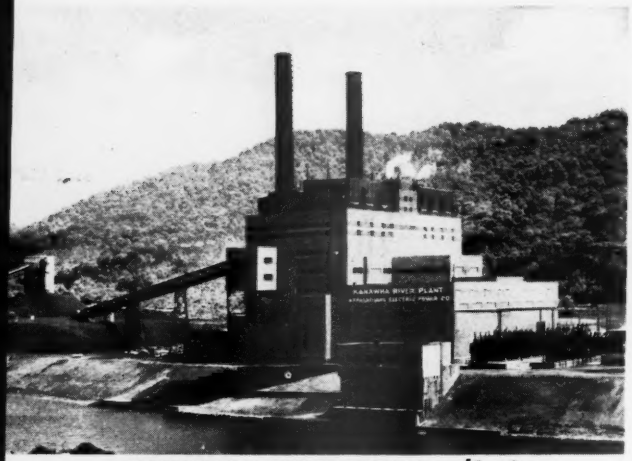

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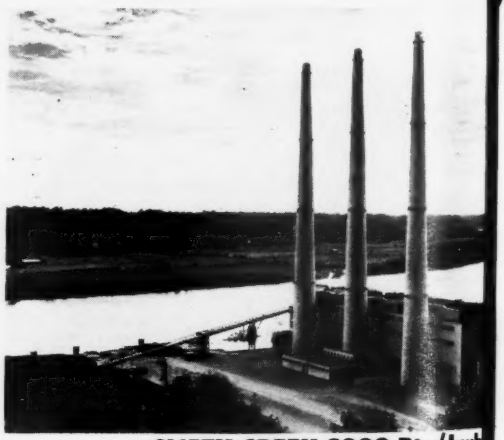

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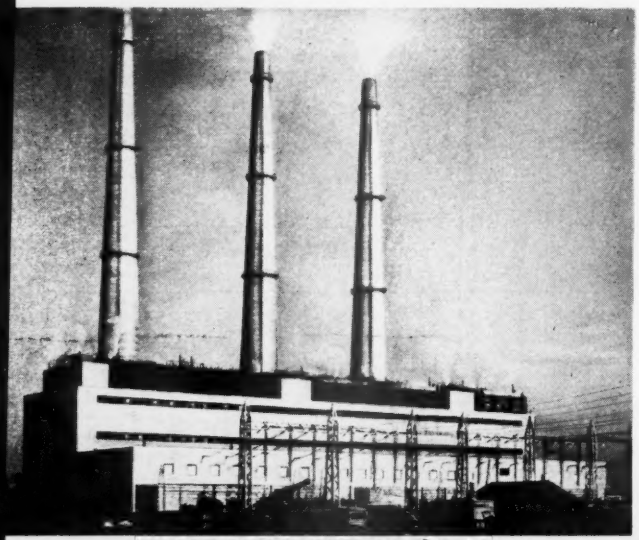

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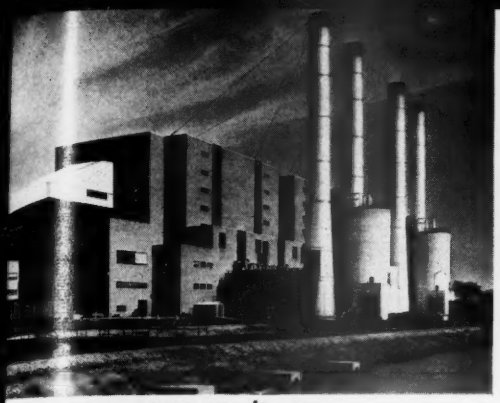

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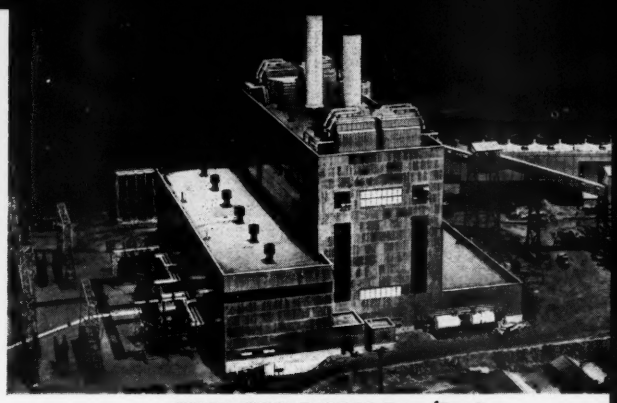

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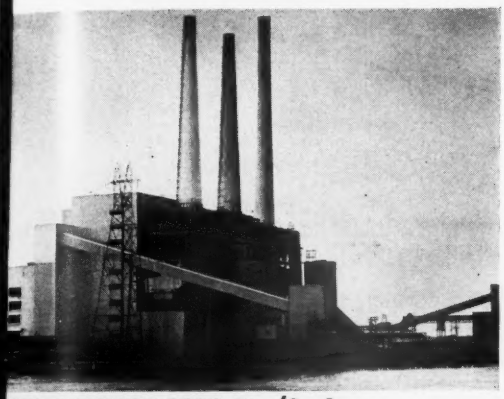

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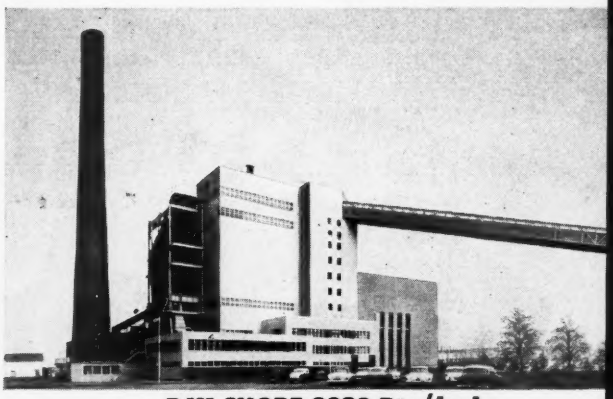

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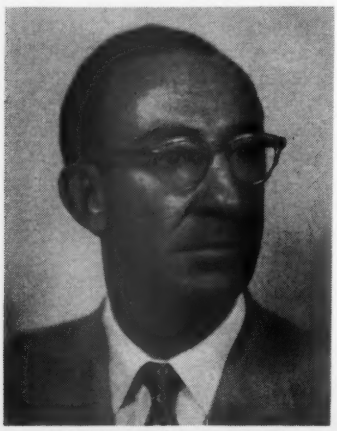
Pages with the Editors

WITH the recent naming by President Eisenhower of Dr. Frank J. Welch, dean of the College of Agriculture of the University of Kentucky to the board of the Tennessee Valley Authority, the TVA for the first time in nearly six months has its full complement of three board members. True, the recess or interim appointments of Arnold R. Jones, as well as Dr. Welch, still must be confirmed by the Senate, which does not meet until January. But at least the TVA chairman, General Vogel, has a working board membership, enabling him to take decisive action in TVA operations.

EVERETT L. PALMER

AND TVA will have to take a number of decisive actions and make a number of policy decisions in the near future. In fact, Congress itself will probably have to make some immediate as well as long-range decisions about TVA financing and further expansion. For several years TVA has been obliged to get along on stop-gap appropriations and to finance certain plant expansion out of power revenues without a clear-cut expression of congressional intent or congressional planning. For several years alternative measures have been before Congress to authorize self-financing by TVA through revenue bonds and otherwise changing the control mechanisms which have heretofore controlled this government corporation.



THOMAS WARD MILES

So this would seem to be a good time for a complete, over-all check up on the factors involved in TVA power operations. Next year TVA will be in existence a quarter of a century and despite the considerable sums of taxpayers' money invested and appropriated by Congress, there is considerable confusion over how it ought to operate in the future. Should it be divorced from congressional purse strings? Should it be liberated from government apron strings? Should it be allowed full territorial freedom for further expansion, or should it be subject to regulatory controls of some sort as in the case of business-managed public utility operations? And there is always the controversial question of who should pay for this—the taxpayer or the area beneficiaries, or a combination of both?

THE leading article in this issue is a careful analysis by an electric utility company official who has sought to take an objective approach in promoting a better understanding of TVA—what it is; how it has grown; the extent and nature of the interest of the nation's taxpayers; and why certain changes are being proposed which have an impact on this in-

KELLOGG'S ERECTION TECHNIQUES KEEP PACE

WELD* is one of M. W. Kellogg's ny advanced shop fabrication tech- ues which have been adapted by company's construction depart- nt for field erection of critical er piping. A patented inert gas- lded method of arc welding which minates backing rings and oxida- , K-Weld provides in field erection nooth internal wall contour equal that obtained under controlled p conditions. For "average" as l as super-critical operating condi- ns, wherever the ultimate in weld- is required, more and more power erating companies are turning to Weld.

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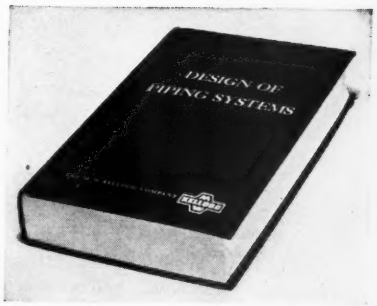

Kellogg keeps pace in theory as well as prac- tice. This 400-page book is the most compre- hensive work ever made available publicly on the design of power piping. This volume, now in its 2nd Edition, is published by John Wiley & Sons, Inc., New York.

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terest. These changes emphasize the need for serious consideration of the future of TVA by Congress, so that there will be an end to year-to-year improvising and a sound long-range plan reached in the best interest of the people of the country.

THE author of this leading article is EVERETT L. PALMER, vice president in charge of public relations for the Pennsylvania Power & Light Company of Allentown, Pennsylvania. A native of Brooklyn, New York, MR. PALMER graduated from Stevens Institute of Technology ('23) with a degree of mechanical engineer. Following his graduation he joined the Pennsylvania Power & Light Company and became assistant general commercial manager by 1929. Since then he has risen through various promotions to his present post. He makes his home in Allentown and is a trustee of Moravian College and is active in a number of business, civic, and educational organizations.

* * * *

RICHARD H. BUTLER, secretary of the Travelers Insurance Company, whose article on "Liability Insurance for the Nuclear Energy Hazard" begins on page 913, is an authority on the subject of insurance risk. This is a subject which has given a great deal of difficulty to legislators and public utility management people, as well as insurance company officials with respect to the hazard of nuclear energy for peacetime usage. This article explains the general principles of the law relating to this new type of insurance, and it should be of interest to those many companies which in one way or another will be involved some time in the production or use of atomic energy. The law is rather complicated, and the fine print in the policies will probably be even more so.

MR. BUTLER is a graduate of Yale (BA, '31) whose entire business career has been with the Travelers Insurance Company. He is one of a large number of secretaries of the Travelers Insurance and Travelers Indemnity companies. He is a member of the governing committee of the Nuclear Energy Liability Insurance Association which is developing an

RICHARD H. BUTLER

insurance program for nuclear energy hazards.

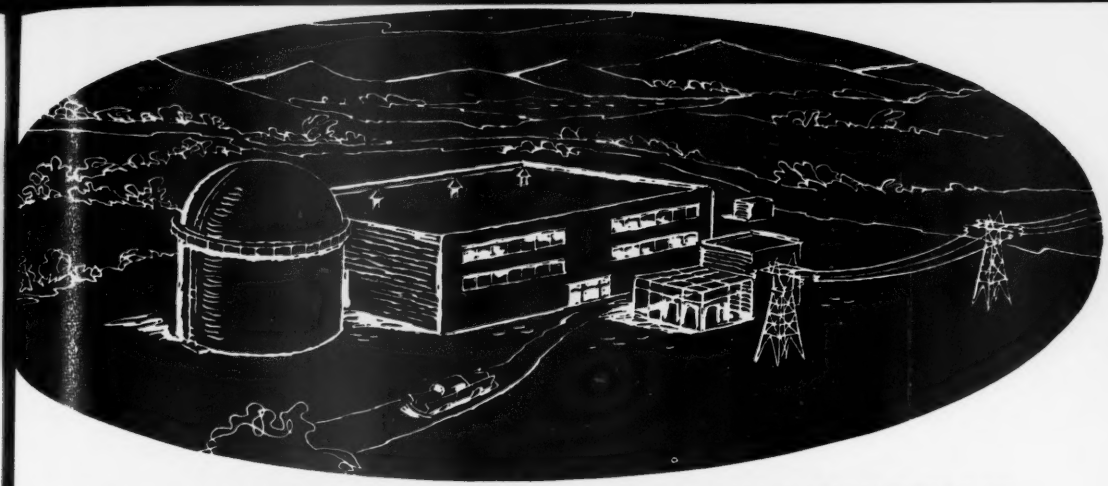
* * * *

THE article beginning on page 925 by THOMAS WARD MILES is an unusual type. But it is likely to be found of considerable interest to Congressmen and business officials and associations which have to be represented from time to time at congressional hearings. The recent television views of various congressional hearings on such diverse methods as internal security and labor racketeering make this worth-while information.

THE author, MR. MILES, has made a virtual career of congressional hearings and what to do about them. It is a message which may well be of value to anyone who has been called or feels likely to be called to testify before a congressional group. MR. MILES' full-time job is that of a Washington public relations counsel. He handles public relations for the Council of State Chambers of Commerce, in addition to his own clients. He is a native of New Jersey and a graduate of Princeton ('30) who worked for many years on Jersey daily newspapers, including the *Newark Evening News*. During World War II he served with the Military Intelligence Service.

THE next number of this magazine will be out December 19th.

The Editors



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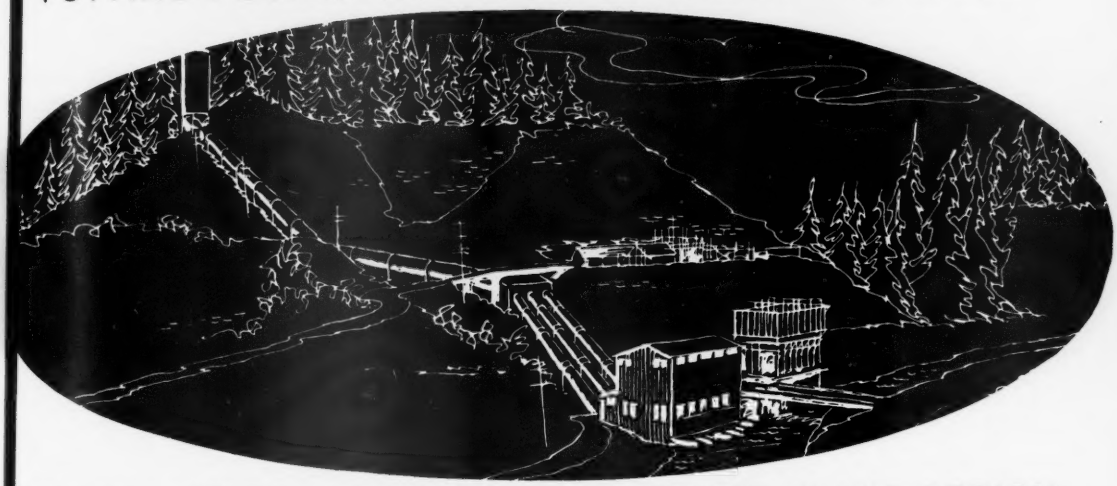

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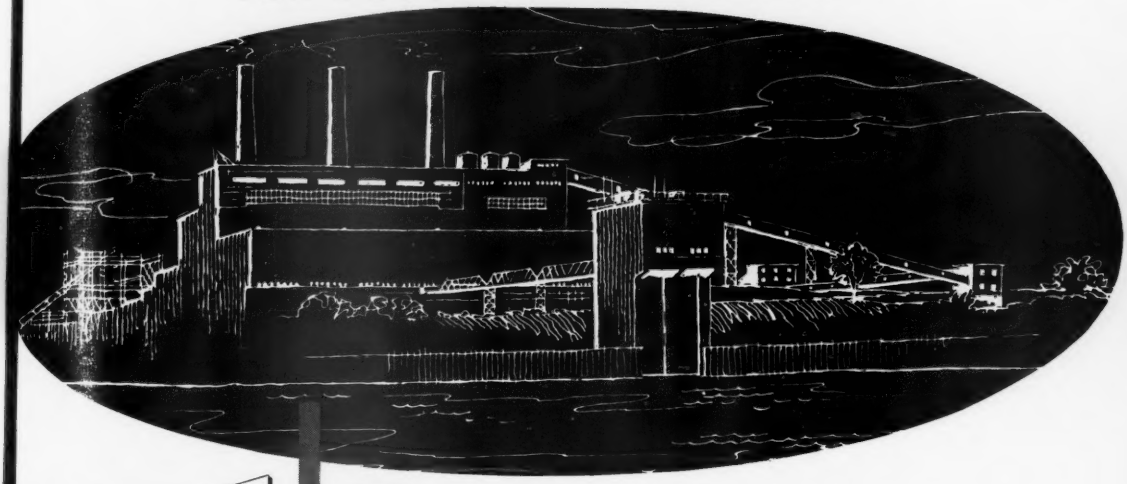

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Coming IN THE NEXT ISSUE

(December 19, 1957, issue)

★

IMPLICATIONS OF SWITCHING TO FAIR VALUE

With the possibility of further deficit financing and continued inflation, the problem of adherence to a strictly cost value rate base continues to be a serious puzzle for regulatory authorities. The more the purchasing power of the dollar drops, and certainly the more quickly it drops, the more original cost values tend to get out of line with the realities of present-day capital requirements for utility plant investment. Nevertheless, there are still those who see a practical reason for continuing the use of an original cost rate base. Thomas E. Wenzlau, assistant professor of economics at Kenyon College. Takes issue with a previous article in this magazine stressing the defects of the original cost approach. This author suggests reasons why it would be contrary to the investor's interest to shift over to fair value or current cost rate base practices.

THE IMPACT OF THE CURRENT MONEY MARKET ON ELECTRIC UTILITIES

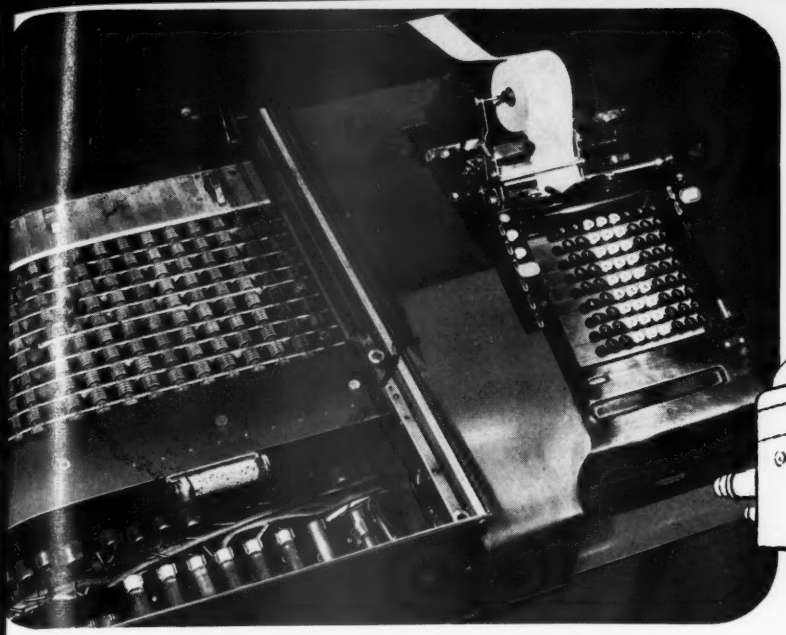
Despite present uncertainties as to whether the so-called "tight money" controls are going to get looser or tighter, the impact of the current money market on electric utilities has become a matter of concern. Harold H. Scaff, vice president of Ebasco Services Incorporated, has made an analysis of this situation since the end of World War II. During that period we have experienced both "easy" money and "tight" money. This author finds that the electric companies are going to need $35 billion in new capital over the next ten years (making a total of $54 billion in all), notwithstanding the likelihood of a shortage of investment capital. He finds that the solution of this problem is going to depend largely on the attitude of regulatory authorities. Greater recognition of the fair value concept of rate regulation may be essential if the industry is to obtain the financing it needs to fulfill its public service obligation.

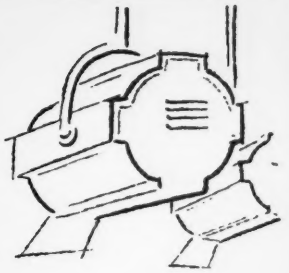
THOSE DIVIDENDS WERE NOT PAID OUT OF CAPITAL

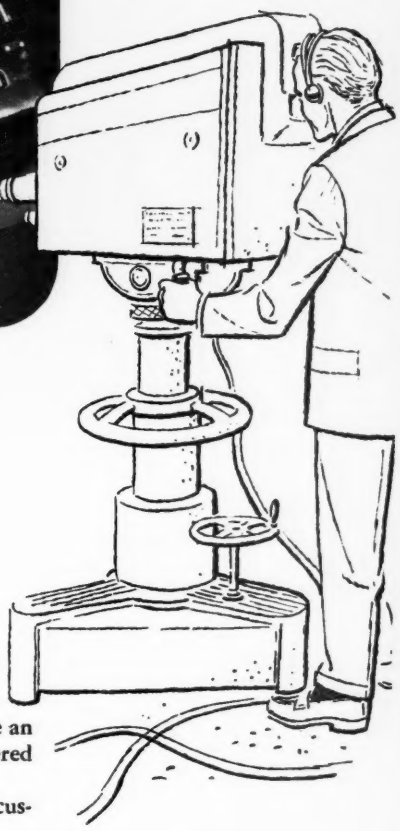
A. J. G. Priest, professor of law at the University of Virginia and nationally known practitioner of public utility law, has exposed a fallacy which has plagued the utility industry as a result of accelerated depreciation. This fallacy, which has been kept alive by repetition in such high places as the United States Senate, is based on the assumption that where so-called tax "savings" resulting from the use of accelerated depreciation have been made the basis of dividend pay-out, such dividends have been subsidized by the taxpayers. Professor Priest examines the Internal Revenue Code to show that dividends of utility companies could not have been paid out of capital under such circumstances, nor were they tax-free, as also alleged by the industry's critics. He concludes that it cannot successfully be charged that a particular dividend which may have the effect of reducing the tax cost of stock in the hands of shareholders receiving that dividend is either tax-free or a return of capital.

★

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***







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"Holding that line [preserving the American system of free competitive enterprise] requires constant vigilance against those who would see our federal government expand to the point where it operates all business, and I would assure you that those who advocate bigger and more powerful centralized government work incessantly to undermine the free enterprise structure."

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Ohio Oil's Kenneth Burns, Manager, Procedures Research and Machine Accounting Division, examines payroll data tape.

ow private line teletypewriters send data to fill out 6500 Ohio Oil pay checks

ayroll information on The Ohio Oil Com-'s 6500 employees comes into Findlay, Ohio, quarters by private line teletypewriter service ten distant locations as far west as California: roduction and two marketing points, one refin-and the research center in Denver.

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among other jobs, the teletypewriter network ers basic personnel data from distant production locations. The tape is processed through business machines. Computations are made by an electronic "brain." And pay checks are issued promptly and accurately twice every month.

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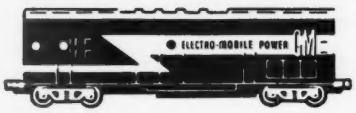

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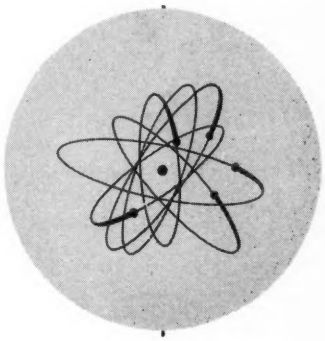

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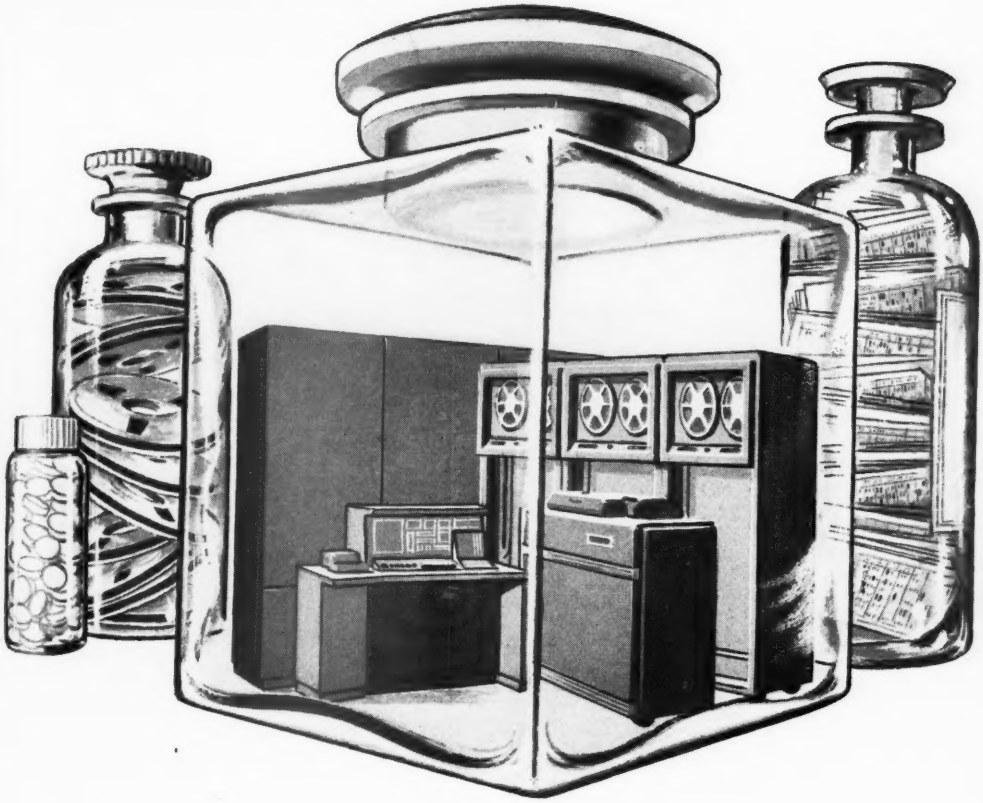

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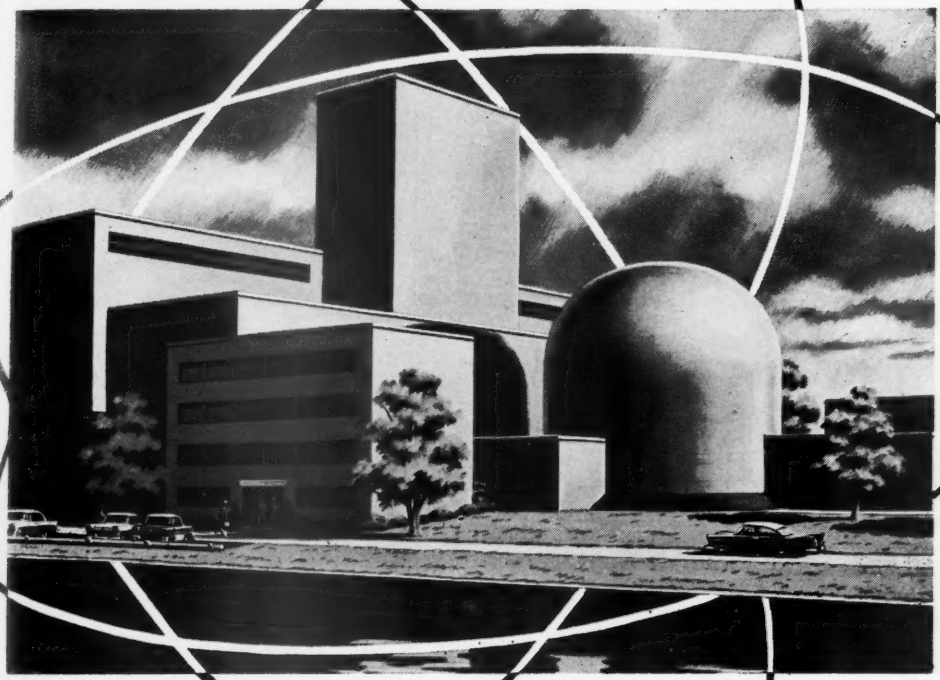

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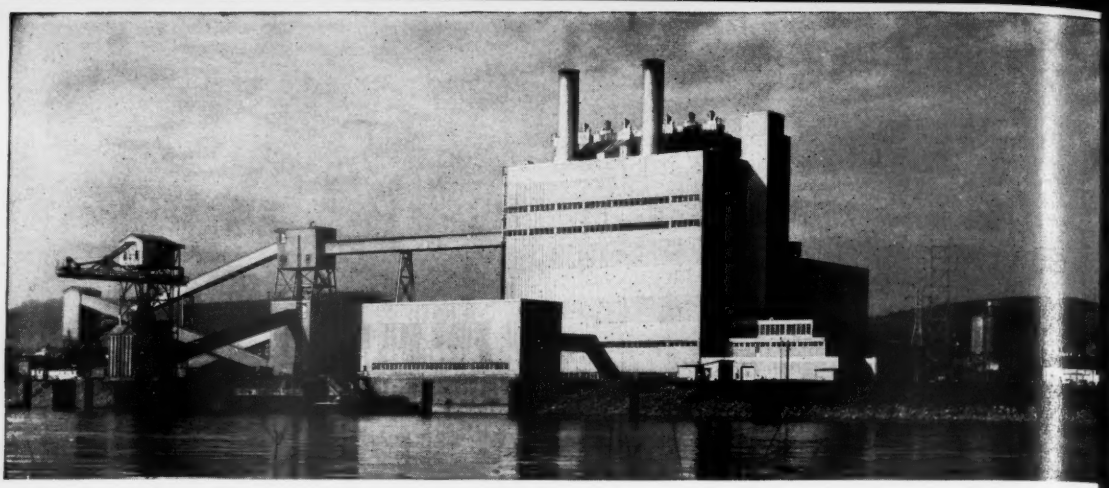

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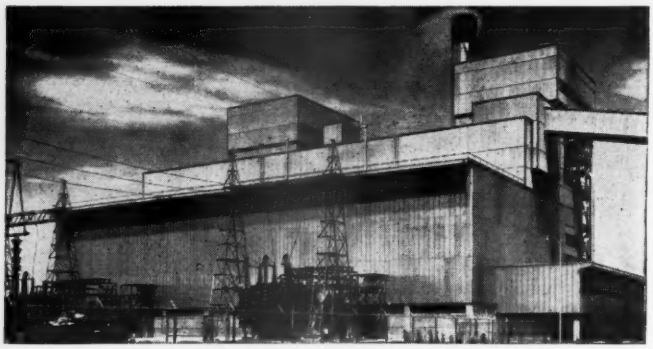

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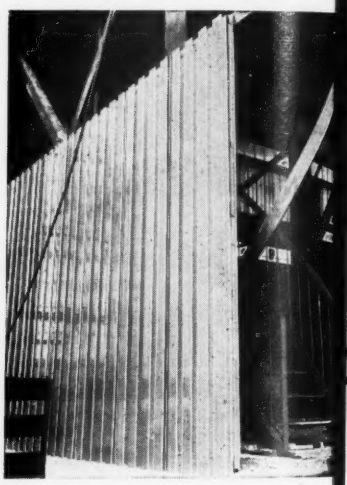

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More than 32,000 sq. ft. of Q-Panels were to enclose the impressive Haw thorn S Electric Station (left) of the Kan as City, souri, Power and Light Company. Ebasco vices, Inc., designed and built th plant.

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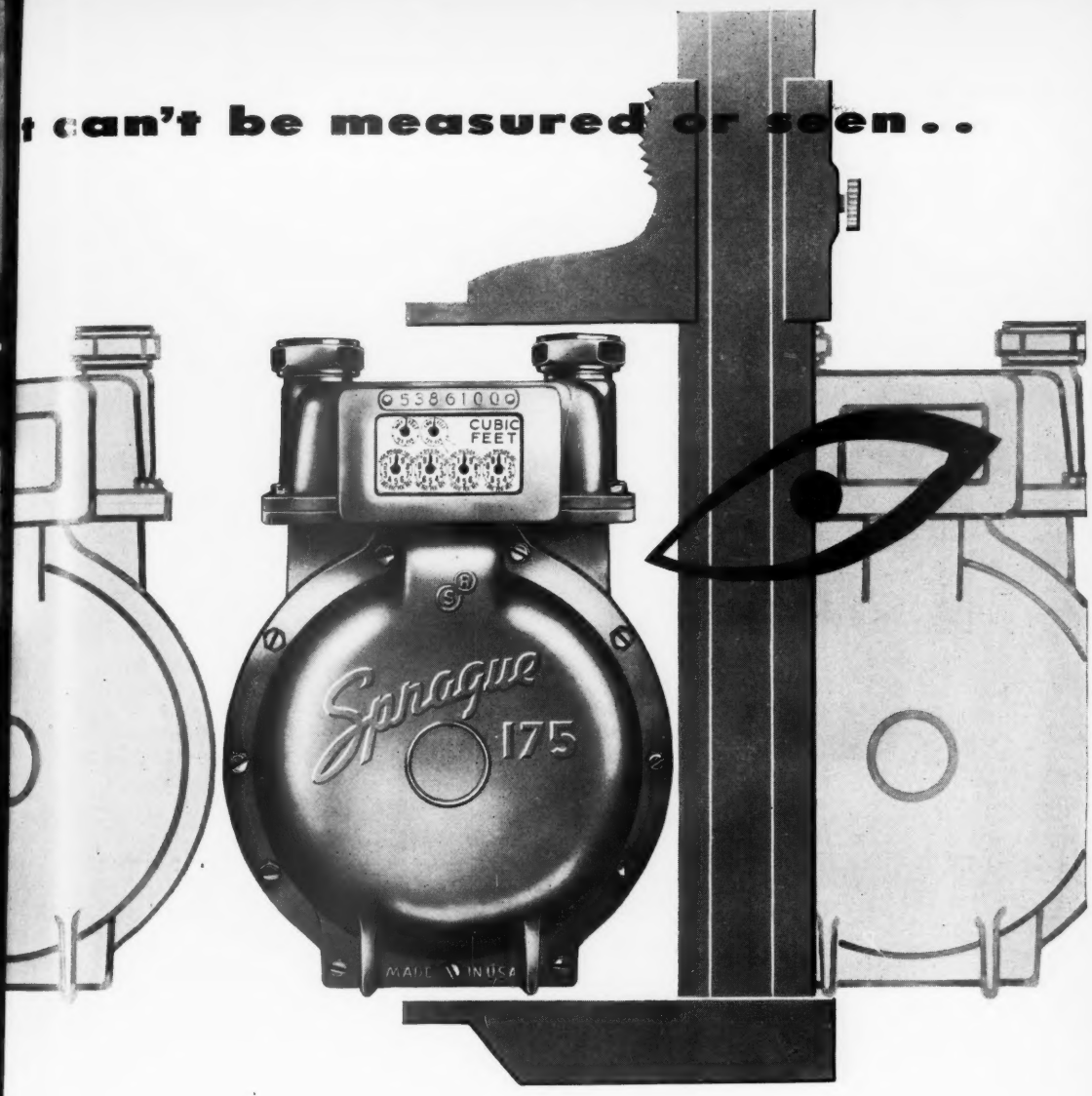

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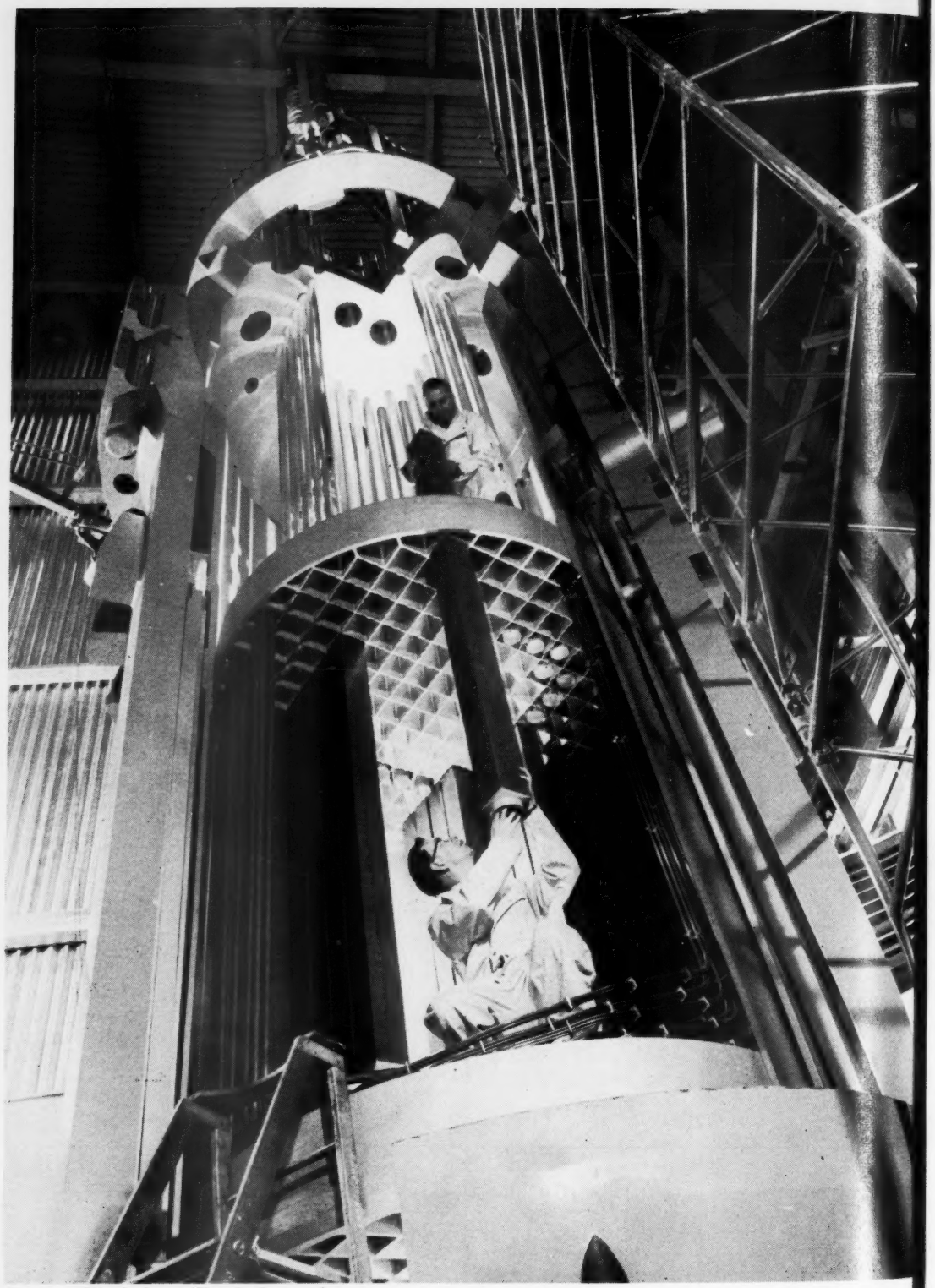
DECEMBER

Thursday—5 *Edison Electric Institute, Market Research Committee, begins meeting, Louisville, Ky.*	**Friday—6** *American Society of Mechanical Engineers ends annual meeting, New York, N. Y.*	**Saturday—7** *American Gas Association will hold Home Service Workshop, Minneapolis, Minn. Jan. 6-8, 1958.* ***Advance notice.***	**Sunday—8** *Short Course on Oil and Gas Law will be held, Dallas, Tex. Jan. 6-31, 1958.* ***Advance notice.***
Monday—9 *Edison Electric Association - American Gas Association, Accounting Division Depreciation Committee, begin joint meeting, Baltimore, Md.*	**Tuesday—10** *American Institute of Electrical Engineers will hold winter general meeting, New York, N. Y. Jan. 20-24, 1958.* ***Advance notice.***	**Wednesday—11** *Electric Companies Public Information Program, Steering Committee, begins meeting, New York, N. Y.*	**Thursday—12** *Edison Electric Institute, Commercial Cooking and Water Heating Committee, begins meeting, Detroit, Mich.*
Friday—13 *Electric Companies Advertising Program begins management group meeting, New York, N. Y.*	**Saturday—14** *New England Gas Association, Operating Division, will hold meeting, Boston, Mass. Jan. 23, 1958.* ***Advance notice.***	**Sunday—15** *American Society of Heating and Air Conditioning Engineers will hold annual meeting, Pittsburgh, Pa. Jan. 27-29, 1958.* ***Advance notice.***	**Monday—16** *Annual Institute on the Law of Oil and Gas and Taxation will be held, Dallas, Tex. Jan. 29-31, 1958.* ***Advance notice.***
Tuesday—17 *New England Gas Association, Accounting Division, will hold meeting, Boston, Mass. Jan. 30, 1958.* ***Advance notice.***	**Wednesday—18** *Pennsylvania Electric Association, Prime Movers Committee, will hold meeting, Hershey, Pa. Jan. 30, 31, 1958.* ***Advance notice.***	**Thursday—19** *Pipeline Contractors Association begins annual meeting, Boca Raton, Fla.*	**Friday—20** *National Rural Electric Co-operative Association will hold annual meeting, Dallas, Tex. Feb. 3-6, 1958.* ***Advance notice.***



Courtesy, Westinghouse Electric Corporation

Full-sized Mock-up of Shippingport Reactor Core

Built of wood, plastic, and metal, the actual-size mock-up permits proper design of component parts to be installed later in the reactor near Pittsburgh, Pennsylvania.

Public Utilities
FORTNIGHTLY

VOL. 60, NO. 12 DECEMBER 5, 1957

What's Happening to TVA?

An analysis of economic and other factors involved in this controversial government operation.

BY EVERETT L. PALMER*
VICE PRESIDENT, PENNSYLVANIA POWER & LIGHT COMPANY

IT is almost a quarter-century since the Tennessee Valley Authority was created. During the years a huge amount of taxpayers' money has been poured into the project. Now changes are being proposed in the TVA situation of such far-reaching effect as to call for a thorough understanding of TVA—what it is, how it has expanded, why the proposed changes have such an impact on the interest of the taxpayers, and why serious consideration of TVA's future by the Congress is urgently needed so that a sound solution of the TVA problem can be reached in the best interest of the people of the country.

TVA is a wholly owned government corporation created by the Tennessee Valley Authority Act of 1933 for the following purposes:

To improve the navigability of the Tennessee river.

To provide for flood control of the river.

To provide for reforestation and the proper use of marginal lands in the valley.

To provide for the agricultural and industrial development of the valley.

To operate government properties at

*For additional personal note, see "Pages with the Editors."

and near Muscle Shoals in the state of Alabama.

Incidental thereto TVA was authorized to construct and operate power facilities at the navigation and flood-control dams.

THE act does not specify the life of the authority or otherwise place a time limit on its existence. The powers conferred upon the authority are exercised through a three-man board of directors appointed for staggered terms of nine years each by the President, by and with the advice and consent of the Senate.

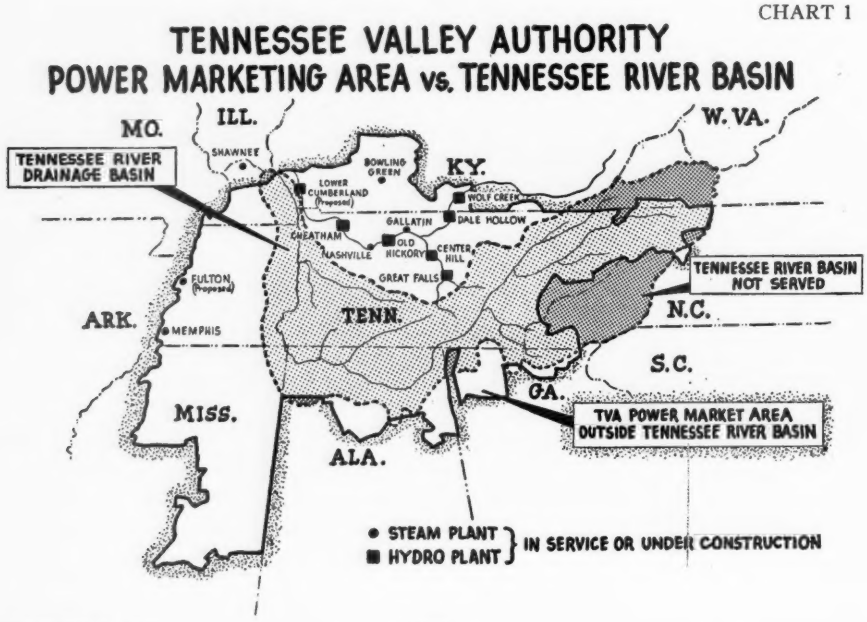
TVA has accomplished the purposes for which it was established. Navigation has been provided over the entire length of the river from Knoxville to the mouth of the Tennessee. Substantially all the dam and reservoir sites have been developed, and flood control realized. The government properties at and near Muscle Shoals have been operated to produce a large amount of fertilizer and other chemical products in competition with others in the same line of endeavor.

The valley has been developed, both in respect to its agriculture and its industry. In addition, the federal government has established important parts of its atomic energy project within and adjacent to the TVA service area.

The Electric Business of TVA

FEW people realized that the 1933 act would some day become the means of setting up the largest electric utility operation in the country. The TVA Act says "The corporation . . . shall have power to construct dams, reservoirs, power-

CHART 1



houses, power structures, transmission lines, navigation projects, and incidental works in the Tennessee river and its tributaries and to unite the various power installations into one or more systems by transmission lines." The act further states that the operation of such facilities is to be consistent with ". . . the purposes of promoting navigation and controlling floods . . ." and ". . . to avoid the waste of water power . . ."

Since 1933, TVA has proceeded, step by step, to expand its service area largely by acquisition of existing utilities until today it has spread over 80,000 square miles in seven states, or about double the area of the Tennessee river basin.

Until quite recently the TVA itself said that it had no right to build generating facilities outside the limits of the Tennessee valley. It is now doing so. The situation today is shown by Chart 1, page 898.

The electric operations of TVA, originally confined to marketing the output of the Muscle Shoals properties and the hydro generating stations at multiple-purpose dams, have since become the major business of the authority. As Chart 2, this page, shows, the main reliance for the generation of energy is now steam-electric stations. At the present time, 70 per cent of the generating capacity owned by TVA is steam-electric and 1,850,000 kilowatts of additional output is projected.

Taxpayers' Investment in TVA

TVA obtains its capital funds from appropriations by the Congress of taxpayers' money and by the retention of earnings from its power operations which, of course, also belong to the taxpayers.

The financial statements of TVA for fiscal year 1957 show that TVA had received in cash and transfers of property a total of $2,389,858,401.

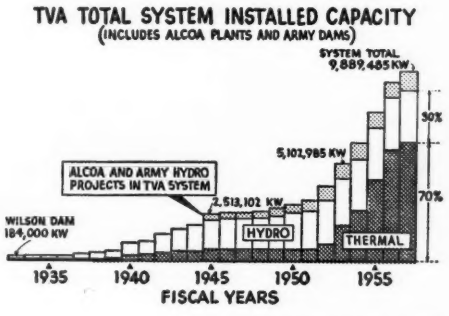
The taxpayers' investment that remained on June 30, 1957, after certain repayments had been made, and after operating losses, was $2,001,203,696. Of this, $1,614,302,185 was assigned to power, and $386,901,511 to nonpower operations. The situation is shown by Chart 3, page 900.

The taxpayers' investment (Chart 4, page 901) has been growing rapidly. From 1950 to 1957 the total has more than doubled, but in this same period the equity in the power business alone stands at a point three times the level of 1950.

The proportionate share of the taxpayers' investment in TVA of over $2 billion as of June 30, 1957, by states and possessions as calculated by the method developed by the Council of State Chambers of Commerce is shown by the table on page 903.

The October 7, 1957, issue of *Barron's* magazine had this to say about the future cost of TVA: "By 1962, the total (investment) is expected to reach $3.6 billion, of

CHART 2



which $3 billion, or 80 per cent, will be in power facilities."

It is evident from these figures that every taxpayer in the United States has a real financial interest in TVA, and the changes that seem to be in prospect in the TVA situation.

In addition to the investment described above, the American people have further concern in TVA because it:

Pays no federal taxes.

Pays no state or local taxes. It does, however, pay an inadequate amount "in lieu of" such taxes.

Pays no interest for the use of capital. Instead, it retains all of its profits.

Receives free services from other federal agencies.

Is free of regulation at the federal, state, and local level.

The Power Load of TVA

THE load of TVA has grown very rapidly since the end of World War II. As Chart 5, page 901, shows, the greater part of this growth, however, has been in sales to federal agencies which for fiscal year 1957 were over 17 times what they were in 1948. In 1957, TVA's sales to municipalities and co-ops were three times, and to industry served direct, over two times what they were in 1948.

While sales to federal agencies appear to be leveling off, the remainder of TVA's load in its present service area is expected to grow rapidly.

Proposed Changes in the TVA Act

CONGRESS is now considering legislation, which, among other things, would

CHART 3

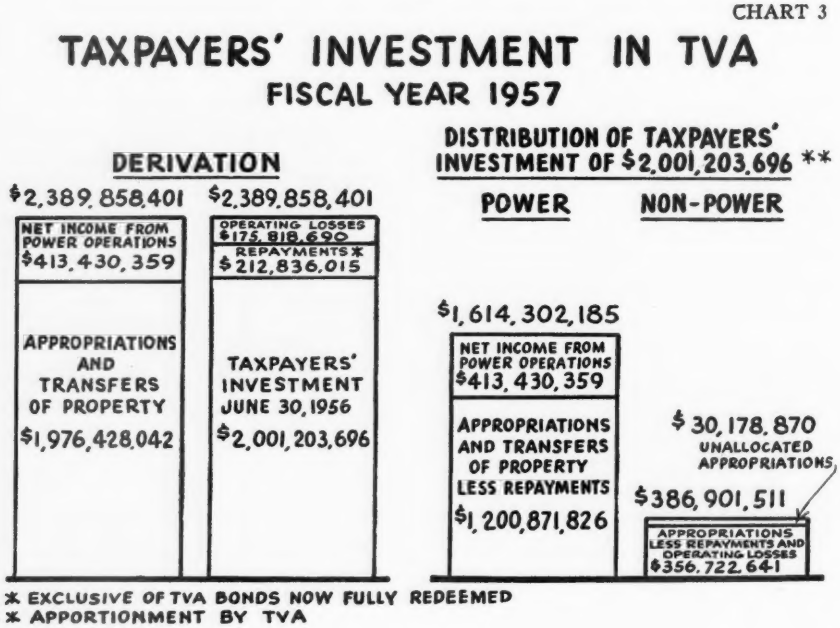


CHART 4

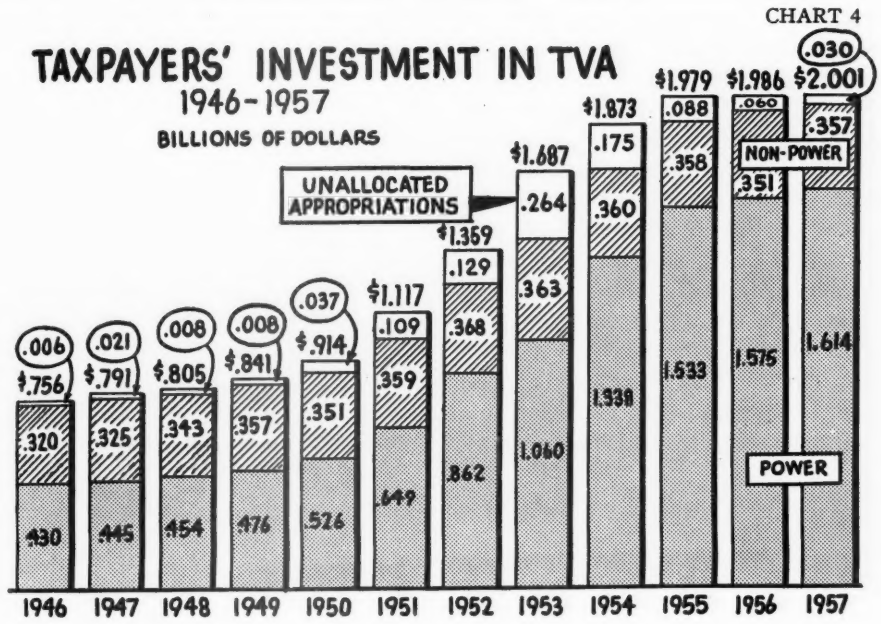
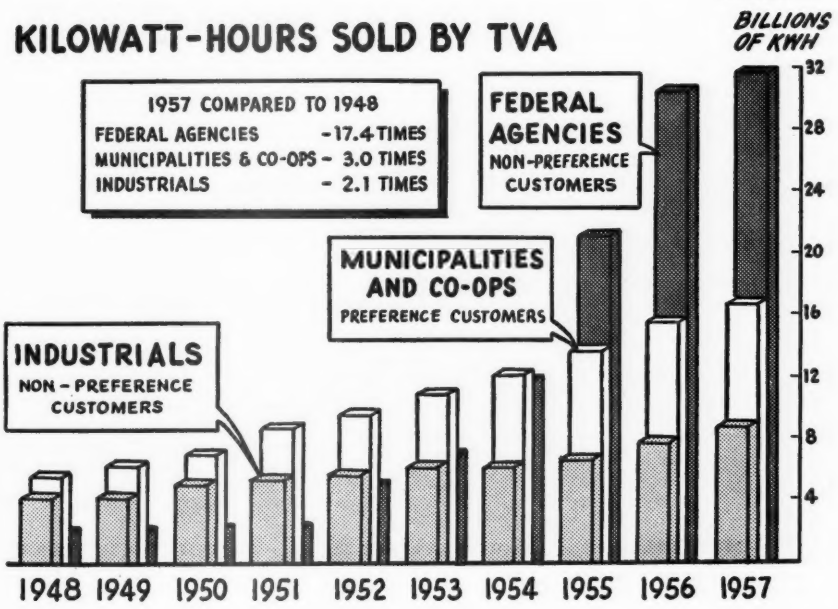


CHART 5



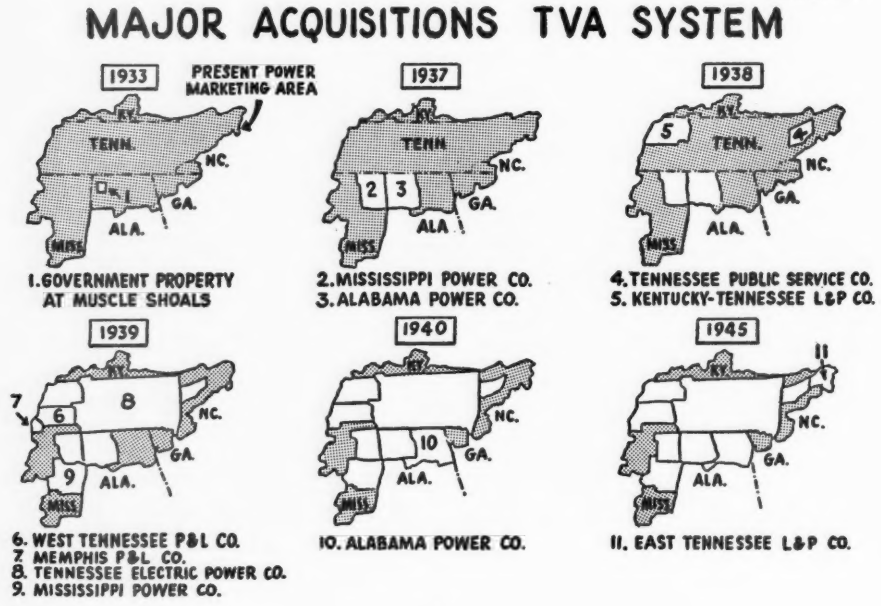
permit TVA to finance the construction of added power facilities through the issuance of revenue bonds. S 1869 (the Kerr Bill), already passed by the Senate, authorizes TVA to issue $750 million of bonds to be repaid from power revenues. The proceeds from these bonds could be used to construct additional power facilities never specifically authorized by Congress. These bonds would be outside the debt limit and nominally would not be obligations of the United States. The House bill, HR 4266 (the Davis Bill), would authorize the TVA to issue an unlimited amount of revenue bonds. This measure has yet to be considered by the House.

THE proposed changes would be far-reaching in respect both to the TVA situation and to federal fiscal and control policies relating to all such governmental undertakings. They involve six important policy matters of major consequence which will be discussed later. They are:

1. Service area limitation.
2. The payment of interest on the taxpayers' investment, and the return of that investment to the taxpayers.
3. The payment of federal business taxes by the customers of federal commercial undertakings.
4. The preservation of congressional control over federal undertakings.
5. Supervision by Federal Power Commission over TVA accounts, rates, and conditions of service.
6. The financing of federal power projects.

IT would seem evident that any changes that are to be made in the TVA Act

CHART 6



should be constructive, and meet certain basic conditions which are:

The people of the TVA service area must continue to receive first-class electric service adequate to meet their needs.

The interests of the nation's taxpayers should be protected.

The controversy over TVA, which has continued unabated ever since the 1933 act was passed, should be resolved and ended, without destroying or crippling the TVA.

Area Limitation

THE area now being served by TVA and its resale contractors was acquired from the electric utilities then in existence in the area.

What has happened is illustrated by the map, Chart 6, page 902. While the last major acquisition took place in 1945, smaller additions to the system have been made since then. One of the reasons why there has been no recent extension of the TVA service area has been the control of the Congress over appropriations.

Should congressional control be relaxed as now proposed, and TVA could finance itself without congressional appropriations or approval, it could then use its tax and cost-of-capital advantages to embark on an extensive area expansion on its own. Further expansion of TVA outside its present area would bring about:

Expropriation of territory of existing utilities.

Loss of tax revenues both at the federal and state and local levels.

Strengthening the monopolistic position of TVA.

Move more of the ratepayers who now pay taxes as a part of their rates into a subsidized position where they would no longer pay such taxes, to the further detriment of all taxpayers.

WHAT do the two bills now before the Congress provide as to the area situation?

The Davis Bill imposes no territorial limitation of any kind on TVA.

DISTRIBUTION BY STATES OF $2,001.2 MILLION TAXPAYERS' INVESTMENT IN TVA

(Millions of Dollars)

Alabama	$20.6	Maryland	$37.2	Oregon	$19.8
Arizona	7.8	Massachusetts	67.1	Pennsylvania	149.1
Arkansas	11.4	Michigan	103.3	Rhode Island	10.8
California	174.9	Minnesota	35.2	South Carolina	13.8
Colorado	18.8	Mississippi	11.2	South Dakota	5.8
Connecticut	35.4	Missouri	52.7	Tennessee	25.0
Delaware	9.2	Montana	6.6	Texas	85.1
Florida	28.2	Nebraska	16.2	Utah	6.8
Georgia	27.2	Nevada	2.8	Vermont	3.4
Idaho	5.8	New Hampshire	5.6	Virginia	29.6
Illinois	152.7	New Jersey	68.7	Washington	32.2
Indiana	47.1	New Mexico	6.0	West Virginia	15.8
Iowa	27.8	New York	297.6	Wisconsin	41.2
Kansas	21.4	North Carolina	30.0	Wyoming	3.4
Kentucky	21.8	North Dakota	5.4	D. C. & Possessions	30.2
Louisiana	22.6	Ohio	121.5		
Maine	8.2	Oklahoma	21.2	Total	$2,001.2

The Kerr Bill, as shown by Chart 7, page 907, invites territorial expansion of the TVA beyond its present service area as follows:

> The area within the Tennessee river basin not now served by TVA, totaling 8,451 square miles.
>
> The full area of all counties partly in the Tennessee river basin, or the present service area of TVA totaling 16,365 square miles.
>
> An additional strip five miles wide beyond the present service area and the areas described in first and second paragraphs above.

There are other exceptions, loopholes, and ambiguities in the area expansion provisions of the Kerr Bill which could, conceivably, permit virtually unlimited expansion of TVA's existing service area. For example, it places no limit on the marketing area that could be supplied from existing plants or those built by future appropriations.

TVA will be permitted to invade areas now served by 11 electric power companies. Three of these are small companies and operate wholly within the TVA drainage basin. Thus the Kerr Bill permits an immediate expansion of 25,000 square miles, or 31 per cent of the present service area, without any further consent of the Congress. *All of this additional area is now being served by existing utilities.*

There is no need for TVA to expand its service area now or at any time in the future. Advocates of TVA have said over and over again that TVA does not intend to enlarge its service area. There should be no objection, therefore, on the part of TVA to defining its area to that now served, thus protecting its neighbors from changes in TVA management and conditions that would again place TVA on the march.

Enticement of Industry

IN July, 1957, the Atomic Energy Commission sharply reduced its power requirements. Should further "cutbacks" be made by AEC, TVA might have such a power surplus that it would feel compelled to reach out into adjoining areas for territory in which to sell the power and thus support the bonds it might have outstanding.

The existence of such a surplus also would be a great temptation for TVA to go after industries in other areas and induce them to move to TVA's area to secure the marked-down power. Such a shifting of industry would be accompanied by the usual economic deterioration, loss of employment, and other serious results for the people in the communities losing the industries.

The Payment of Interest on the Taxpayers' Investment in TVA

FEDERAL power undertakings other than TVA include interest in figuring the power rates to be charged. As these other projects pay their power revenues into the U. S. Treasury, they are, to the extent their rates are correctly figured, paying interest on the taxpayers' investment.

TVA stands alone in not doing this.

Both the Davis Bill and the Kerr Bill provide that TVA pay a return on the appropriation investment at a rate equal to the average interest paid by the United States Treasury on its total marketable obligations.

	Under Proposed Bills	*What Should Be Charged*
Appropriation investment	$1,200,871,826	$1,200,871,826
Accumulated net income	——	413,430,359
Taxpayers' investment	——	$1,614,302,185
Average interest rate of all U. S. Treasury marketable issues—end of fiscal 1957	2.707%	——
Present going interest rate and allowing for financing costs	——	3.50%
Interest on investment	$ 32,507,600	$ 56,500,576

This is unfair to the taxpayers in two respects.

First, the appropriation investment referred to is only a part of the taxpayers' investment in the project. The total investment to be repaid should include the accumulated net income of TVA which TVA's 1957 report shows to be $413,430,-359.

Second, the interest rate on which the rate of return would be based is lower than justified by the nature of the TVA project.

The average interest rate payable by the Treasury on its total marketable obligations includes the interest rate on a large amount of short-term Treasury bills and obligations which, under normal conditions, are at a relatively low rate compared to long-term issues. The kind of money which is in TVA is a long-term investment and the rate charged should recognize this fact.

THIS would be consistent with the recommendation of the Comptroller General in his 1956 audit of TVA which states:

> Therefore, we are continuing our recommendation that the authority be directed to pay interest on the investment of federal funds allocated to power, including construction in progress and investigations for future projects, at a rate adequate to reimburse the United States Treasury for the cost of providing funds . . .

Some idea of the inadequacy in the interest charge under the proposed bills that the taxpayers would have to make up is

shown by the table on page 905, which indicates a deficiency of $24 million for fiscal 1957.

Repayment of Appropriation Investment

TVA is now required by the Government Corporations Appropriation Act of 1948 to repay the appropriation investment in power facilities under a formula which in effect requires repayment in instalments over a 40-year period. Since the repayment provision became effective the payments from power proceeds to the Treasury have totaled $240,131,519, of which $65,072,500 has been applied to the liquidation of funded debt and the remaining $175,059,019 paid into the general fund of the Treasury. As of June 30, 1957, the unamortized balance was $1,196,133,914.

Both the Davis Bill and the Kerr Bill cancel this *mandatory* provision. Both of these bills grant permission to the TVA board to repay the appropriation investment *if it wishes to*. It is unlikely that any further repayment would ever be made under the Davis Bill. The Kerr Bill, however, does provide that at least $10 million be paid annually to reduce the appropriation investment in power facilities. *At the $10 million rate it would take over 160 years to repay the present unamortized appropriations and the retained earnings.*

Both bills are defective in that nothing is required in respect to repaying retained earnings, which as of June 30, 1957, totaled $413,430,359. These earnings belong to the taxpayers, and shoud have been paid to the Treasury as they were earned, as is done in the case of other federal power projects. Instead they were used to build property in lieu of calling on the Congress to appropriate money for the purpose. So they are just as much a part of the taxpayers' investment as the appropriations.

For TVA to receive preferential treatment and be excused from all or part of the repayment obligation required of other federal projects would be to open the door to the extension of this preferential treatment to other fields of government financing that require amortization of the investment or loan.

This would indeed be a serious matter.

The Payment of Federal Taxes by TVA

TVA pays no federal taxes of any sort. The tax system of this country involves the payment of taxes by individuals and corporations on the businesses they conduct. TVA is a public utility business and has been acknowledged to be so. It is unfair to exempt a portion of an industry from taxes, while the remainder has to pay them.

There is no good reason why the consumers of TVA's power should not pay their fair share of federal income tax just as their neighbors and counterparts are doing elsewhere throughout the country. The large industrial power consumers are the principal beneficiaries of TVA power. The absence of this tax element in the rates they pay gives them an unfair advantage over their industrial competitors in other areas, who now make such payments in their rates. Thus, the inclusion of federal income tax in TVA's operations would remove a gross inequity and loophole in the tax structure.

TVA has reported a profit on its electric utility business each year since fiscal year 1938. If it had been required to pay federal corporate income taxes like all other business, in the nineteen years since 1938 it

would have paid a total of over $375 million in such taxes to have earned the profits it has reported. The annual record is shown by Chart 8, page 909.

The Preservation of Congressional Control over the Undertaking

THE proposals now in Congress would place TVA in a special independent and preferential status free of the normal budgetary and congressional controls which apply to other agencies of the federal government.

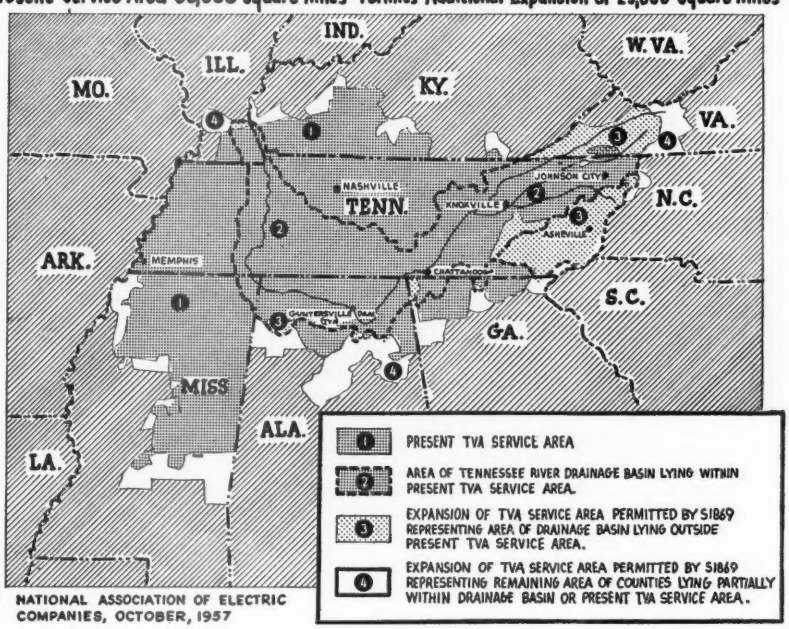
The historic constitutional principle of congressional control over federal spending must be held secure. The need for control by Congress over the expenditure of public funds by federal bodies has been recognized and supported without distinction by both political parties time and time again. At the time the 84th Congress was considering the problem of financing the highway program, Senator Estes Kefauver had this to say:

> I do not know how the proponents of the so-called administration bill got the idea that it would be in keeping with constitutional government . . . if the Congress delegated its responsibility for many, many years to come to a corporation over which it would have little control, and granted to it the authority to borrow money . . . Certainly, no power of the Congress has been guarded more zealously than its control over the purse strings . . . If these bonds

CHART 7

EXPANSION OF TVA ELECTRIC SERVICE AREA UNDER S1869

Present Service Area 80,000 Square Miles Permits Additional Expansion of 25,000 Square Miles



SOURCE NATIONAL ASSOCIATION OF ELECTRIC COMPANIES, OCTOBER, 1957

are issued, Congress will have no control whatsoever over the manner in which the proceeds are spent . . .

CONGRESSIONAL control over fiscal operations has widespread support by taxpaying groups and individual citizens generally. Notable in these groups is the American Farm Bureau Federation which, in a statement filed May 7, 1957, with the Senate Public Works Subcommittee on Flood Control—Rivers and Harbors, in respect to the Cooper and Kerr bills (S 1855 and S 1869), had this to say:

> However, we also believe that the Congress should retain a substantial degree of authority by the establishment of appropriate limitations, subject to periodic scrutiny, on the total amount of financing and construction operations undertaken by TVA. This is particularly important in view of the uncertainty as to future power requirements of the Atomic Energy Commission. And . . . it is our view that TVA's service area should be maintained as now established.

The Comptroller General, in a 1955 letter to the Senate Public Works Committee, pointed out the need for Congress to keep control of the TVA enterprise:

> This great dependence of the system (TVA) on a continued enormous government power demand leads to the suggestion that, in any expansion program, the affairs of the TVA should require unusually close control by the Congress and the executive branch of the government.

BOTH the Davis Bill and the Kerr Bill would free TVA from practically all the controls now exercised by the Congress and its agencies. For example:

> They would have the effect of exempting TVA from the most important provisions of the Government Corporation Control Act of 1945.[1]
>
> The TVA bonds would be outside the federal public debt ceiling.
>
> Both proposals permit TVA to operate outside the federal budget and budgetary control.

[1] The American Enterprise Association, Inc., under date of August 2, 1957, had this to say about the proposition:

> The Government Corporation Control Act of 1945 gave to the Secretary of the Treasury authority to regulate the issuance of bonds by all government corporations. He was given the power to determine among other items when such agencies can issue bonds, the amount of bonds to be issued, the maturity of the issues, the rate of interest, and discounts. Congress apparently believed that the Secretary of the Treasury, who is responsible for raising money for the operation of the government as a whole either through taxes or through the flotation of debt if necessary, must be in a position to control the debt operations of all government agencies if he is to have general responsibility for administering the entire public debt of the United States.
>
> * * * *
>
> Proponents of the TVA contend that the agency should not be made subject to the authority of the Secretary of the Treasury because the agency is a business enterprise and because its bonds do not involve a pledge of the general credit of the United States but rather they are based only on the power revenue of the TVA. Even should the latter be the case, nevertheless it should be remembered that the United States government probably has a moral obligation to meet the interest and principal payments if there is a default on the part of the TVA. The authors of the bills admit this.
>
> Apart from this argument, the flotation of bonds by the TVA could be in conflict with the general task of debt management imposed upon the Treasury relative to the entire public debt of the United States. The terms and maturities of issues offered by the TVA might be in conflict with the terms and conditions that the Treasury was or is likely to offer in a flotation or a reissue of the general public debt of the United States.
>
> The Secretary of the Treasury, the Bureau of the Budget, and the Comptroller General have all urged that legislation providing for revenue bonds should not exempt the TVA from the provisions of the Government Corporation Control Act.

Both proposals would permit TVA to expand its power facilities without the consent of the Congress.

The exemption of TVA from the most important provisions of the Government Corporation Control Act of 1945 is of such importance that it should be given special and most serious consideration.

Supervision by Federal Power Commission over TVA Accounts, Rates, and Conditions of Service

UNDER the Bonneville and Fort Peck acts and the Flood Control Act of 1944, the Federal Power Commission has been given responsibility generally for the approval of rates for the sale of power produced by projects constructed by the Corps of Engineers. The commission has no such authority over the TVA.

Neither the Davis Bill nor the Kerr Bill would do anything to correct this situation.

However competent and sincere the TVA board may be, in fairness to it, the customers of TVA, and the taxpayers, the board should not have the final responsibility of regulating rates and conditions of service. The Federal Power Commission, an agency of the Congress, was established for the purpose of regulating the electric utilities of this country. It is eminently qualified for the task. It is the only agency of the federal government having complete and continuing records and information on practically all segments of the power industry, publicly and privately owned, its capacity, operations, requirements, loads, locations, and interconnections from which intelligent and sound planning can be projected in accordance with the laws of Congress.

Self-regulation by any governmental agency is certain to fail in the long run. Some independent agency should undertake the task. The Federal Power Commission has indicated its willingness to assume this responsibility in respect to TVA. Any revisions of the TVA Act should contain provisions to bring this about.

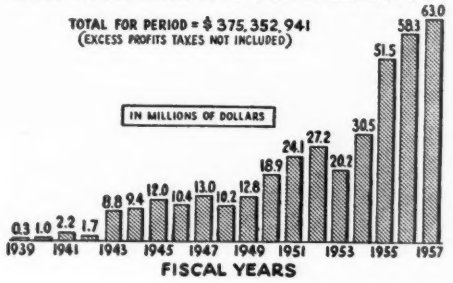
Financing TVA by Issuing Revenue Bonds

THERE is nothing new about revenue bonds. They are extensively used by state and local government bodies to circumvent debt limitations and other legal obstacles to the consummation of various projects.

Both bills would place the taxpayers' investment in the power business of TVA, which now totals over $1.6 billion, in a secondary position. To maintain the taxpayers' position, TVA should pay interest on the taxpayers' investment and retire it over a reasonable period of years. *These interest and retirement payments should constitute a prior claim on the earnings of TVA over any other payment. The taxpayers' investment in TVA is in reality in the nature of a loan as the 40-year repayment provision of the Government Cor-*

CHART 8

FEDERAL INCOME TAXES TVA WOULD HAVE PAID BASED ON RETENTION OF FULL NET POWER INCOME



porations Appropriations Act implies and any subsequent financing should be subordinated thereto.

The financing of federal public works projects through revenue bonds has been disapproved of by congressional committees and by many of the present proponents of revenue bonds for TVA. In 1955 there was introduced in the Senate S 1130 to establish a Federal Highway Corporation with authority to issue $21 billion of bonds, the proceeds of which were to be used to finance a highway program. These 30-year bonds were to be outside the debt limit and were not guaranteed by the United States. They were to be financed by a continuing appropriation from motor fuel taxes. The majority of the Senate Committee on Public Works disapproved of this proposal because it would "place the Congress in a fiscal strait jacket" and it would "prohibit the Congress from exercising its constitutional responsibilities." At about the same time the Joint Committee on the Economic Report opposed revenue bonds as a means of financing public works because they would circumvent the debt limit and because they involved earmarking revenues.[2]

Both bills introduce a number of undesirable features to the so-called revenue bond idea as applied to TVA.

In the first place, the bills say that the bonds would not be the responsibility of the federal government. The senior Senator from Oklahoma, who has sponsored the Senate bill, had this to say on this point:

> I want to say, as far as I am concerned, I regard any bond issued by this authority (TVA) of the same dignity and obligation as that of a government bond . . . My position would be at any time these bonds got into default, that I would sponsor legislation to hold the holders of these bonds secure.

In addition, both bills, while somewhat different in detail, provide that the bonds would not be included in computing the outstanding public debt.

The Davis Bill authorizes the Secretary of the Treasury to purchase TVA revenue bonds directly or in the open market. The bill also provides that the total amount of such bonds held by the Treasury should be deducted from the amount of debt outstanding under the statutes fixing the debt limit. This means that any bonds floated by the Secretary of the Treasury to buy TVA revenue bonds through the flotation of general bond issues of the United States fully guaranteed as to principal and interest by the government would be outside

[2] The observations of congressional leaders in respect to the revenue bond principle made at the time the legislation was under consideration are pertinent to the present proposals for revenue bonds for TVA:

> SENATOR KERR. . . . the substitute which has been offered does not embody sound financing. It has been labeled a boon for investment bankers. It was conceived by investment bankers. Now that the proponents of the amendment have come into the open and said that the bonds should be a direct obligation of the federal government, why adhere to the fallacy of a special corporate setup, with power to issue bonds and fix the interest rates? If the sponsors had desired to have bonds issued at as low a rate as those at which regular government bonds are issued, why would they have bypassed the Treasury of the United States in the issuance of the bonds? There can be but one reason, and that is that those who would handle the bonds would have an advantage which they would not have had if bonds were to be issued regularly by the Treasury of the United States.
>
> SENATOR BYRD. It contemplates a dual set of books. In one the ordinary operations of government subject to debt, budgetary, and appropriation control will be disclosed. In the other the extraordinary functions of the government, as set forth in this legislation, with special privileges to evade sound financing requirements will be concealed.

the debt limit. The net result would be that the bonds of the TVA, instead of being floated to the general public as revenue bonds, could be bought by the United States and would thus become direct and fully guaranteed obligations of the federal government. In effect, they would cease to be revenue bonds. Under such circumstances it would seem that the TVA would clearly not be taken off the backs of the American taxpayers.

Other Aspects of TVA of Concern To the Public

IN addition to the above six important policy matters of major consequence, a number of other phases of the TVA situation should be given attention.

Does the federal government have the responsibility of meeting the future power needs of the TVA area? The proponents of TVA have said repeatedly that the federal government has such a responsibility because the Congress has appropriated money for the construction of facilities. The President has said repeatedly that the government does not have the responsibility of meeting the power needs of any area and that this fact is true in respect to TVA as well as other sections of the country.

The constitutional right of the federal government to build facilities solely for the commercial generation of electric power has never been determined.

The fairness of the allocations for the multiple-purpose projects have long been questioned, and these questions have never been satisfactorily answered.

The free services received by TVA from other federal departments aggregate a substantial amount of money. The Bureau of the Budget and the Comptroller General, together with others have urged that TVA be required to pay its fair share of the cost of such services.

The TVA Act has a preference clause. In fiscal year 1957 less than 30 per cent of TVA sales were to preference customers. TVA's preference clause contained in § 10 of the act reads as follows: ". . . in the sale of such current by the board it shall give preference to states, counties, municipalities, and co-operative organizations of citizens or farmers not organized or doing business for profit, but primarily for the purpose of supplying electricity to its own citizens or members . . ." It is very evident that if TVA obeyed the preference clause it would have abundant power available for its preference customers for an indefinite time in the future.

Conclusion

IT is obvious that significant and far-reaching problems are pressing for solution by TVA and the Congress. Their solution should take into account basic elements to insure that:

1. The control of the Congress over TVA is strengthened and extended.
2. TVA is limited strictly to its present service area.
3. The taxpayers' whole investment including retained earnings is fully protected and not subordinated and that it will be repaid in an orderly manner over a period of forty years.
4. TVA pays adequate interest on the taxpayers' whole investment in the utility project.
5. TVA pays federal corporation and excise taxes as do the other tax-paying businesses and industries of this country.
6. TVA fully compensates other federal agencies for services rendered to it.

7. In fairness to the taxpayers of the states and communities in which TVA operates, the properties and operations of TVA be subjected to taxation at state and local levels on the same basis as any other citizen.

8. The Federal Power Commission is empowered to supervise the rates, conditions of service, and accounts of TVA.

9. Future financing will not be any burden on federal or state taxpayers.

10. The future power needs of the TVA area are met in full.

THERE is no single facile solution that will permanently resolve these problems.

The proposals for the use of revenue bonds involve some very real dangers.

In arriving at a constructive solution Congress can and should consider all possible alternatives so that it can choose one that will meet the problems of TVA without doing injury to any of the fundamentals of the American constitutional system, and that will be completely sound financially.

New Fields to Conquer

"GENERAL *MacArthur's famous remark that old soldiers never die is reminiscent of the durability of many federal bureaus. Once established they seldom either die or fade away. Unlike old soldiers to whom the country owes a lasting debt, they thrive on uselessness and become an unjustified drain on taxpayers. The Rural Electrification Administration is a good example.*

"In 1935, when REA was set up, only 10.9 per cent of the farms in the country were receiving central station electricity. Today as a result of private electric company and REA action, the job of farm electrification is 95 per cent complete.

"The general manager of the National Rural Electric Co-operative Association points out that the agricultural revolution has made farmers a minority group in the rural community and that this year marks the end of the 'farm electrification era' and the beginning of the 'rural electrification era.' Therefore, this government agency which has fulfilled its purpose is not winding up its affairs, but is casting about for new fields to conquer. In Indiana a few REA co-operatives have placed before the Rural Electrification Administration a request for a $42 million loan which would enable them to build power-generating plants in a state already adequately supplied with reasonably priced electric power.

"Speaking against the proposal, the governor of Indiana said: 'It would also enable them to duplicate existing service lines of private utilities which are providing sufficient service throughout the state. . . . We in Indiana regard this as fantastic and unreasonable and an invasion of private and local rights by federal paternalism.'

"This is another back-door entrance by Socialism and if it succeeds, one more block will have been knocked from the foundation of individual opportunity and political independence."

—EDITORIAL STATEMENT,
Industrial News Review.

Liability Insurance for the Nuclear Energy Hazard

This article explains the general principles of the law relating to this new type of insurance, and it should be of interest to those many companies which in one way or another will be involved some time in the production or use of atomic energy. The law is rather complicated, and the fine print in the policies will probably be even more so.

By RICHARD H. BUTLER*

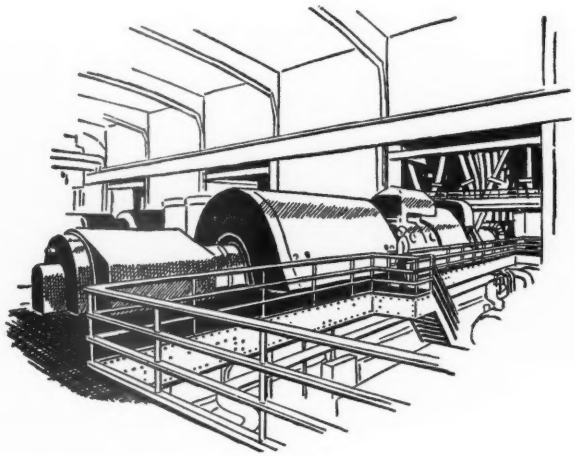
THE Atomic Energy Act of 1954 opened the field of peacetime uses of nuclear energy to private enterprise. The Price-Anderson Bill, which is now Public Law 256 of the 85th Congress, effective September 2, 1957, has eased the problem of legal responsibility for injuries to persons and property resulting from nuclear incidents.

Reduced to one sentence, the Price-Anderson Bill provides for those who qualify $500 million of government indemnity over and above required private insurance or other demonstration of financial responsibility.

Although the passage of this bill is the most recent event in the development of peaceful uses of atomic energy, a summary of some of its important provisions is perhaps the best starting point for a discussion of the liability insurance that is available for the nuclear energy hazard.

FIVE new definitions are added to § 11 of the 1954 Atomic Energy Act. These are definitions of "financial protection," "licensed activity," "nuclear incident," "person indemnified," and "public liabil-

*Secretary, Travelers Insurance Company. For additional personal note, see "Pages with the Editors."



ity." The most important of these are the first and the last two.

Paraphrased "financial protection" is the ability to respond in damages and to meet costs of handling claims. This is what reactor operators and certain other licensees of the Atomic Energy Commission are going to have to provide evidence of in order to operate and to bring themselves under government indemnity.

"PERSON indemnified" is anyone who may be liable for public liability. As will be seen later, this means that when the conditions of "financial protection" are met by a facility operator, the government indemnity of $500 million reaches out, not only to him but also to his designers, constructors, suppliers, and even to the chance trespasser or other interest who is the cause of a nuclear incident. The example of this latter interest which has been most frequently used in the Congress and elsewhere, is the proprietor of an airplane which happens to crash on a reactor and sets off a nuclear incident.

The last definition is so important that it is worthy of quotation in full. It reads as follows:

> The term "public liability" means any legal liability arising out of or resulting from a nuclear incident, except claims under state or federal Workmen's Compensation acts of employees of persons indemnified who are employed at the site of and in connection with the activity where the nuclear incident occurs, and except for claims arising out of an act of war. "Public liability" also includes damage to property of persons indemnified: provided, That such property is covered under the terms of the financial protection required, except property which is located at the site of and used in connection with the activity where the nuclear incident occurs.

Note here the new concept that employees of the interest liable for a nuclear loss who are not at the site of the activity are placed in the same status as all other members of the general public. Note also that the same treatment is extended to off-site property of the interest responsible for the loss provided the financial protection also extends to such property.

A new §170 is added to the act and this section has paragraphs running from a through j.

SECTION 170. a. sets up as a condition of licensing by the Atomic Energy Commission that the licensees have financial protection as established by the commission. This requirement is mandatory on the commission and licensees, where the licensee is the possessor of a utilization or production facility. A reactor is an example of a utilization facility and a fuel reprocessing plant is an example of a production facility.

This same mandatory provision runs to construction permits for production and utilization facilities. The requirement of financial protection is on a permissive basis in connection with licenses for the possession, etc., of source, special nuclear, and by-product material.

Section 170. b. sets forth the points which the commission shall take into consideration in establishing the amount of financial protection to be provided by each licensee. Among other things, there is provision for varying the amount of financial protection according to the hazard of the

particular activity. Also, the required amount of financial protection may not exceed the amount of liability insurance available from private sources. It is specifically provided that facilities having a rated capacity of 100,000 or more electrical kilowatts shall provide financial protection in the maximum amount available from private sources. The last sentence of 170. b. reads: "Such financial protection may include private insurance, private contractual indemnities, self-insurance, other proof of financial responsibility, or a combination of such measures."

In §170. d. the commission is authorized on a permissive basis to bring its own contractors for the construction or operation of production or utilization facilities under the financial protection and $500 million indemnity provisions where the activity involves the possibility of a substantial nuclear incident.

Section 170. e. limits the liability for a single nuclear incident of persons indemnified to the amount of financial protection which the commission has required of the licensee or contractor, plus the $500 million of government indemnity. The section then goes on to set up the court procedure for apportioning payments to claimants, etc., in any case where it appears that losses from a nuclear incident will probably exceed the limit of liability described above. The substance of this is that once a licensee has established the financial protection required by the commission, in accordance with §170. b., the government indemnity of $500 million takes over for any liability in excess of the level of that financial protection, and when the government indemnity has been exhausted, there is no further liability on any one.

Section 170. f. calls for a fee from licensees or contractors to whom the $500 million indemnity is to apply. This fee is $30 per year, per megawatt of thermal energy for commercial licensees. The fee may be reduced for certain other types of activities but is subject to a minimum of $100 per year.

The other paragraphs of §170 are devoted primarily to administrative matters and space does not permit describing them in an article of this scope. The balance of the new law deals with the Advisory Committee on Reactor Safeguards and one detail of licensing procedure.

The above synopsis of the Price-Anderson Bill is designed to point up the subject of responsibility to the public

¶ "The *Atomic Energy Act of 1954 opened the field of peacetime uses of nuclear energy to private enterprise. The Price-Anderson Bill, which is now Public Law 256 of the 85th Congress, effective September 2, 1957, has eased the problem of legal responsibility for injuries to persons and property resulting from nuclear incidents. Reduced to one sentence, the Price-Anderson Bill provides for those who qualify $500 million of government indemnity over and above required private insurance or other demonstration of financial responsibility.*"

for injuries to persons and damage to property arising from nuclear hazards. That which has been labeled "financial protection" is the responsibility of that part of American industry which is operating in the nuclear energy field and qualifies for inclusion under the act. Provided "financial protection" is met, the liability of industry then ceases.

The insurance industry has been working intensively for two years on the development of a program to meet the bulk of "financial protection." Until August, 1957, it had to work without definite knowledge as to whether or not government indemnity would come into existence.

It became apparent at an early stage that the limits of liability insurance protection that are needed and desired to cover nuclear energy hazards are far beyond the capacity of any single company to provide, even with the assistance of existing or foreseeable reinsurance facilities. This condition led to the formation of the stock and mutual liability insurance pools or syndicates in the United States. The pool formed by the stock insurance companies currently has over 135 members, and bears the name Nuclear Energy Liability Insurance Association, or "NELIA" for short. The corresponding mutual pool has over 100 members and is named the Mutual Atomic Energy Reinsurance Pool. You will, however, normally hear it referred to by the name of the underwriting section of that pool, which is the Mutual Atomic Energy Liability Underwriters, or "MAELU" for short.

NELIA came into formal existence in May, 1956. It is prepared to offer insurance of the nuclear energy hazard up to a maximum limit of between 45 and 50 million. The mutual pool and MAELU were formed at about the same time and can offer a maximum limit of liability insurance of between 10 and 15 million.

Thus, although the exact division of capacity is yet to be confirmed the maximum limit of private insurance for the nuclear energy hazard available from the two pools in the United States is $60 million, and includes both domestic and foreign capacity.

NELIA and MAELU have the same policy forms, rates, and rating plans. Every risk written by one of the pools is reinsured in part by the other. One of the questions most frequently asked is: "How does a buyer in need of nuclear energy liability insurance make contact with these pools?" The answer is that he proceeds through the liability insurance channels that he is normally accustomed to use. If he buys his insurance from an agent or broker, he goes to that individual, who will place his insurance through the company member he represents. Similarly, if a buyer is accustomed to obtaining his liability insurance from a direct writing company, he goes to that company and through it obtains access to the pool to which it belongs. One point to bear in mind is that no single company is a member of both the NELIA and MAELU and neither of the pools has the authority to commit the limits written by the other. This means that where a buyer is seeking a higher limit of insurance than is sold by the pool he first goes to, it will be necessary for him to make a separate entry into the second pool, through a company which is a member of that pool.

Two Insurance Methods for Reactors

"THERE are only two differences between the method used in rating power reactors and that employed for test and research reactors. In the case of the latter, an additional loading is applied to the price for the first $1 million of insurance (but not to the millions above that), to reflect the fact that in most cases there will be a greater number of people working around these reactors who will be members of the public. In the typical power reactor, most persons near it will be employees of the operator. Around test reactors there are likely to be employees of the concerns whose materials are being tested, as well as other members of the public."

NELIA and MAELU have actually been writing insurance since March, 1957. An approved policy form dated February 1, 1957, is on file with the various state insurance departments. However, to date, all insurance has been written on binders because developments since February 1st indicate the need for extensive revision of this policy.

As this is written, the revised policy is nearly complete and will be filed shortly with the states. When it is approved, the outstanding binders of the two pools will be replaced by the new policy.

The basic form to be used by the pools is known as the "Nuclear Energy Liability Policy" and, in its unmodified state, it is intended to apply to a nuclear production or utilization facility. It insures only the nuclear energy hazard as defined, and does not interfere or overlap with properly endorsed regular liability insurance policies which the same risk may carry. When I say "properly endorsed" I refer to the fact that early in 1958 the insurance industry will begin a program of endorsing all new and renewal regular liability policies to exclude the more severe portions of the nuclear energy hazard. This exclusion endorsement will be covered in more detail

after the following brief description of the pool contracts.

THE Nuclear Energy Liability Policy tracks the provisions of government indemnity closely. Since the language of the two is not the same, and some language of the Price-Anderson Bill is subject to interpretation, it should not be said that they track exactly. The policy carries an aggregate limit for the entire period of coverage, which is also a single or combined limit for bodily injury and property damage.

The policy provides that this aggregate limit is impaired or reduced by payments of losses and loss adjustment expense under the contract. There is no provision in the policy for automatic reinstatement of the limit to its original amount. However, both NELIA and MAELU contemplate a procedure of negotiated reinstatement of limits following knowledge of a loss.

This policy contains no expiration date but runs continuously until canceled or until the policy limits have been exhausted.

So long as the policy remains in effect the discovery period for losses is unlimited, and it runs for two years following termination of the policy for any reason.

Like the government indemnity, the policy insures not only the reactor operator, but also all other persons or organizations for their legal responsibility for a nuclear incident at the insured reactor. For the reactor operator this is largely insurance against the hazards of existence and operation of the reactor itself or its related facilities at the site. For most other interests, such as designers, constructors, or suppliers, it amounts to product liability or completed operations coverage.

REFERENCE was made above to the fact that government indemnity reaches into two areas not normally within the concept of liability insurance. These consist of protection to the interest responsible for a nuclear loss, for damage to property of that interest not at the site of the reactor, and workmen's compensation to employees of that interest not at the site. The example of this protection used by Congress was the case of a university which constructs a reactor on or near its campus. Except for the actual reactor building and the employees therein, the property and employees of the university are not directly connected with the reactor. In the event of a loss which extended beyond the reactor site, government indemnity protects the university just as it would protect the property or employees of others. Although this portion of the Nuclear Energy Liability Policy is not complete at this writing, it appears that it will be able to do the same thing in most instances and, thereby, meet the requirements of "financial protection" in this respect.

There are eight exclusions in the policy and some of them have subdivisions within them. However, this need not be frightening because a number of the exclusions relate to coverage which is intended to be afforded on other policies or are designed to prevent overlap and consequent doubling up of limits on two or more policies issued by the pools. The ones that you might say are "for real" are as follows:

THERE is a limitation on the extent of the contractual liability coverage provided. This does not mean that the pools will necessarily refuse to sell broader contractual liability coverage, but relates to

the fact that price quotation must usually be made without full knowledge of the extent of the contractual obligations that have been assumed. The policy as drafted starts everyone off on the same basis and leaves broader contractual liability for individual consideration and rating.

There is an exclusion of weapons of war. Incidentally, a weapon such as a submarine is not considered to be under the exclusion until it has been accepted from the builder by the government.

There is a war risk exclusion.

There is an exclusion of any liability for damage to the facility or property thereat, and damage to nuclear material while being transported, handled, or stored.

There is an exclusion of all operations outside the territorial limits of the United States of America, its territories or possessions.

Subject to an exception for transportation, there is an exclusion of incidents caused by any nuclear material away from the site. Among other things, this is aimed at off-site waste disposal and fuel reprocessing, which hazards, however, the pools are willing to separately consider for insurance.

The policy conditions are too long for review here. Also, they are not of as pressing interest as the insuring agreements and the exclusions. For a buyer reading the policy itself, the premium condition, the limits condition, the inspection and suspension condition, the common occurrence condition, the other insurance condition, and the cancellation condition are probably the most important.

In addition to the underlying facility policy, there will be endorsements available to reform it into a single interest contract for such risks as designers, constructors, suppliers, transporters, etc. The pools have already issued a number of binders for this type of insurance. In the presence of government indemnity, this single interest coverage will be of interest to concerns having to do with uninsured government reactors and facilities not qualifying for government indemnity. It will also have extensive application in the foreign field, as soon as the pools are ready to provide insurance outside the United States, its territories or possessions. Briefly, this contract is one issued to cover a single concern of the types mentioned, and it will provide whatever limits that concern wishes to buy. In this connection, it should be borne in mind that where the concern is involved with an insured facility, it will have primary coverage under

¶ *"It is an obvious and unavoidable truth that in creating a system of insurance rating for an entirely new hazard, primarily catastrophic in nature, a good deal of judgment must be exercised. NELIA and MAELU accept this situation and believe that the methods they are using are the best that can be applied in the present state of the art. At the same time, they recognize that the nuclear industry is advancing rapidly and that changes will take place in the next few years."*

the facility operator's policy. In such a case, the limits available to them under their single interest policy will be only those which they bought, minus the limits of the facility operator's policy. This provision protects the pools from doubling up on limits on a single nuclear incident. Similarly, there will be a provision in the endorsement for proration of limits, where more than one single interest policy is involved in a particular loss.

At the present time there is no exclusion of the nuclear energy hazard in the public liability policies customarily issued in the United States. What I shall call, for lack of a better term, the "commercial isotope" hazard has existed for some time and has been insured under regular liability policies. The new nuclear energy insurance program does not propose to disturb this situation. Furthermore, many suppliers and contractors to government reactors and other nuclear facilities have had insurance for a number of years, and a way is to be left open for this insurance to be continued on regular liability policies if so desired.

However, direct private insurance of nuclear production and utilization facilities is new. Past experience does not contemplate it, and as the nuclear energy liability insurance pools come into full operation, the hazards which they insure will be deleted from the coverage of regular liability policies. This will be accomplished by the attachment of an exclusion endorsement. The key paragraph of this endorsement is the opening one. In effect, it says that the regular liability policy does not cover any hazard for which the insured has directly or indirectly acquired coverage in one of the pools. Obviously, this is directed at overlap and doubling up of limits, which point is of the greatest concern to the insurance companies when they are putting such large amounts of money at risk.

The endorsement then goes on at length to exclude some hazards in any event. Briefly, these are the hazards of operation of a nuclear facility, the hazard of injury to a nuclear facility or property thereat, and any hazard related to used fuel or waste material. Bear in mind that all the way through, this exclusion is talking only about the nuclear energy hazard as such. All ordinary public liability hazards will continue to be insured by the regular policies.

There is a further exclusion of nuclear facilities located outside the United States of America, its territories or possessions, or Canada. This exclusion runs not only to the operators of the facilities, but to designers, constructors, suppliers, etc., as well.

At this point, it should be noted that the insurance industry recognizes that American concerns are going to have need for insurance of the nuclear energy hazard in foreign countries. It is also possible that the normal foreign insurance markets will not be adequate for all purposes. The nuclear energy liability insurance pools propose to make every effort to provide or arrange reasonable protection against the nuclear energy hazard for American concerns throughout the world. At the same time, the creation of such a market is a complex operation. The pressure of the nuclear insurance problem within the United States is such that the pools have

Limitations of Insurers

"IT became apparent at an early stage that the limits of liability insurance protection that are needed and desired to cover nuclear energy hazards are far beyond the capacity of any single company to provide, even with the assistance of existing or foreseeable reinsurance facilities. This condition led to the formation of the stock and mutual liability insurance pools or syndicates in the United States. The pool formed by the stock insurance companies currently has over 135 members, and bears the name Nuclear Energy Liability Insurance Association, or 'NELIA' for short. The corresponding mutual pool has over 100 members and is named the Mutual Atomic Energy Reinsurance Pool."

been forced to the decision that the development of insurance facilities outside this country must wait until the domestic program is complete and off the ground. This domestic program is now so far along that it is not unreasonable to hope that progress in arranging for foreign insurance will be made in the near future.

What are NELIA and MAELU going to charge for insuring this new hazard, and how do they go about making their rates? As of the present time, the pools have made about 50 quotations on a variety of exposures and a pattern is beginning to emerge. Bearing in mind that some of these quotations are tentative, it is still probably worth while to devote some space here to examples of a few actual prices.

THE highest price yet quoted for a reactor involves a power reactor expected to have a thermal capacity of 630 megawatts, and on which construction has

started. The quotation there for a limit of $5 million would be $120,000 per year. The price for the maximum capacity of the two pools—namely, $60 million of limit—is $260,000 per year.

Another power reactor with 480 megawatts of thermal capacity in a more remote location and also in the early stages of construction has been quoted at $60,000 per year for $5 million, and $140,000 per year for $60 million of coverage.

THE lowest reactor price yet quoted is for a 5-watt package research reactor. That price is $1,500 per year for $1 million of limit and $3,500 per year for $5 million of limit. In a case like this, the price for $60 million of limit is probably academic. However, if that much insurance were wanted, the annual price would be $31,000.

A fairly typical fuel fabrication plant has been rated at $7,500 per year for $5 million of limit and at $35,000 per year for $60 million of limit. If that fuel fabricator is selling fuel elements to pool-insured reactors, he will get his insurance for the product liability hazard on the fuel elements without additional charge on the facility policies sold to the reactor operators. If, on the other hand, he is selling fuel elements to uninsured reactors, the pools would quote him a separate product liability insurance price of $2,500 per year for $5 million of limit, and $30,000 per year for $60 million of limit.

A critical facility not located at the same site with a reactor has been quoted at $6,000 per year for $5 million of coverage, and $33,500 per year for $60 million of coverage. If the critical facility were at the same site as a reactor, it would be sharing limits with the reactor and the price would be taken care of by a small additional loading on the reactor premium.

ALL of the quotations that have been made have been developed individually by a joint subcommittee of the governing committees of NELIA and MAELU. Reactors were the first risks to be rated and while at this stage it is impossible to develop a set formula that can be adhered to strictly, three sets of guides or bench marks have been employed. The first of these is aimed at assessing the relative hazard of the particular reactor under consideration. For this purpose the joint subcommittee looked at type, use, capacity, location, and containment. "Type" refers to the kind of reactor, such as pressurized water, boiling water, swimming pool, etc. "Use" has to do with the purpose of the reactor. Is it for research, materials testing, or power production? "Capacity" is measured in terms of thermal wattage. "Location" is clear enough and takes into account the proximity of the reactor to population centers, the value of surrounding property, meteorological conditions, etc. "Containment" refers to the effectiveness of the reactor shell or building and its ability to contain a maximum credible incident. It is only fair to say that relatively heavy rate loadings are contemplated for reactors that are not fully contained.

The second set of guides used by the Joint Committee was the downward gradation of rates per million of limit for the higher limits. Clearly, the greatest possibility of loss lies within the first million

dollars of insurance, and the hazard grades downward from there. The scale employed for power reactors is stated in terms of price for the first million dollars of insurance, and is as follows:

First Million	—100 %	
Next $ 4,000,000—	50 %	each
Next $ 5,000,000—	20 %	each
Next $10,000,000—	10 %	each
Next $20,000,000—	5 %	each
Over $40,000,000—	2.5%	each

THE last guide in the rating of power reactors is the matter of a minimum price for $1 million of coverage at any point in the scale. It is a recognized principle of insurance that regardless of the remoteness of a hazard being rated, a sum of money as large as $1 million may not be put at risk for less than some minimum price. To do otherwise would improperly expose the reserves of the companies, which are designed for the protection of all policyholders and would defeat the underlying purpose of accumulating long-term reserves against catastrophic losses. Catastrophes, by their nature, are infrequent and unpredictable. Underwriters know that they will occur, but not when nor where.

For example, who could have foreseen that within a single year in or near the United States, the *Andrea Doria* would be lost, and two separate mid-air collisions would be sustained by commercial airlines? In the case of power reactors, the presently established minimum price for $1 million at any level is $1,000.

There are only two differences between the method used in rating power reactors and that employed for test and research reactors. In the case of the latter, an additional loading is applied to the price for the first $1 million of insurance (but not to the millions above that), to reflect the fact that in most cases there will be a greater number of people working around these reactors who will be members of the public.

In the typical power reactor, most persons near it will be employees of the operator. Around test reactors there are likely to be employees of the concerns whose materials are being tested, as well as other members of the public. Similar situations are to be expected at research reactors and, in the case of universities, the students would all be part of the public liability exposure.

The other difference for test and research reactors is that the minimum price for any $1 million of insurance at any level is $500 instead of $1,000. This is because these reactors are mostly smaller than power reactors and the maximum credible incident is correspondingly less.

❦

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THE guides for rating reactors have been covered in some detail. Similar but less complicated systems have been developed for rating such nuclear facilities as fuel fabricating plants and critical assemblies.

A number of the rate quotations that have been made are for single interest coverage to designers, constructors, and suppliers, for their product liability or completed operations exposure in connection with the reactors they serve. These risks have been rated in several ways, one of which is a percentage relationship to the price that would be quoted for insurance on the nuclear facility itself.

It is an obvious and unavoidable truth that in creating a system of insurance rating for an entirely new hazard, primarily catastrophic in nature, a good deal of judgment must be exercised.

The plan is applied to the experience of the insured nuclear energy industry as a whole, over a moving 10-year period. It is not applied to individual risk experience. In other words, if premium returns develop, they will be made to risks that have had losses, as well as to the others.

The premiums earned by the pools for the first ten years of operation will be accumulated. From these premiums will be deducted actual incurred losses and loss adjustment expense thereon. A specified provision for expenses and long-term reserves will also be deducted. The balance of the 10-year premiums will be accumulated in a special reserve.

DURING the eleventh year of operation, a procedure of gradual refund of this reserve will begin. The portion of the reserve to be returned in the eleventh year will be that percentage of it which corresponds to the relationship of the first-year premiums to the accumulated 10-year premiums. Thus, if the premiums earned by the pools were equal in each of the ten years, one-tenth of the reserve would be returned in the eleventh year. This return will be made to the insureds who paid premiums in the first year of operation and will be divided among these insureds according to the proportion which each one's premium bears to the total premium earned in the first year.

In the twelfth year the process will be repeated, with the returns going to policyholders during the second year of operation. The same procedure will be followed every year thereafter.

ASSUMING that losses in excess of those provided for in the quoted premiums do not occur, this rating plan will leave the pools with a species of revolving 10-year reserve. In each year after the tenth, any new unused loss dollars will be added to it and simultaneously a portion of the reserve will be returned to insureds in the earliest year still within the plan.

If for any reason this rating plan were discontinued or the pools themselves dissolved, the entire amount of this reserve would eventually be returned to policyholders.

If it is possible that there will never be any public liability losses from the nuclear energy hazard insured by the pools, this long-term rating plan could have a terrific effect on premium ultimately charged. Depending on size of risk, it could return to policyholders between two-thirds and three-quarters of the total premiums originally paid in.

Telling the Industry's Story to Congress

This is an unusual type of article which should be of considerable interest to Congressmen and business officials and associations which are represented at congressional hearings.

By THOMAS WARD MILES*

A UTILITY witness was testifying recently before a congressional committee on a matter that affected not only his company but his industry. It was late in the day by the time he was called and only the chairman remained to hear him. The witness had worked hard on his prepared statement. He was making a good presentation. The atmosphere was informal. The chairman asked a question and the witness made an offhand statement about a point that was very much at issue but was not in the bill about which he was testifying. The chairman picked him up on it immediately and suggested they read the bill together.

At the conclusion of each sentence in the short bill, the chairman, assuming a patient and fatherly air, devastatingly asked:

"It doesn't say anything about your point in that sentence now, does it?"

The chief contentions of the witness were lost sight of. His effectiveness was impaired. Later he admitted to associates that for all his preparation he had not read the bill.

An elementary oversight? Certainly, but not uncommon.

The incident illustrates the delicacy of the job that electric, gas, and telephone companies, along with business in general, have in appearances before Congress.

EVEN as experienced a lawyer as the late Wendell Willkie ran into difficulties. At a Senate hearing early in 1941 Willkie discounted a statement in one of his cam-

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paign speeches as a "bit of campaign oratory." The remark, which was picked up, raised a political storm.

THERE is more to a congressional hearing, as routine as it might seem, than appears to a casual observer. It is a national sounding board in the development of public opinion. Not only legislation but campaign issues come of it. This makes the hearings especially important to publicly regulated industries, any one of whose executives might be called.

For every unfortunate who comes a cropper there are thousands who serve our democratic society by providing their elected representatives in both houses of the Congress and the public with information needed to draft laws. An idea of how much activity is involved is indicated in the recent report of the Senate Government Activities Committee for the 84th Congress.

The report estimated that 3,951 committee meetings, totaling 11,677 hours, were held by Senate committees in consideration of the legislative business of that Congress.

Aside from witnesses subpoenaed in congressional investigations, most witnesses at congressional hearings are invited by the committees to give their views. In general, these witnesses are either government officials or private citizens. Official witnesses, who are always heard first, convey the views of the federal departments, bureaus, and agencies. Private witnesses speak either for themselves or for groups and associations. Except for those cases involving confidential matters or national security, hearings are open to the public.

On important and controversial bills the committees are sometimes overwhelmed with requests to testify. They are forced to be selective in those cases because they have much ground to cover and little time. When they are reasonably sure that the testimony of a number of the applicants will be about the same, they invite only one, and put the statements of the others in the printed record.

There is some politics, of course, in the matter of getting a hearing, but for the most part the committees and their staffs are fair. If a witness runs into roadblocks in his efforts to get before a committee, he has one dependable resort—he can ask his Senator or Representative to get him in. And such is the power of congressional courtesy that he will probably be scheduled.

THERE are occasions when an ascendant group in a committee will try to limit hearings to make a perfunctory case for its own views. Where this develops, it has become the practice to allow the filing of statements by mail or otherwise. They go into the record and sometimes are effective.

The witness' appearance before a committee is the climax of hours and hours of work. If he speaks for himself, he has probably labored over his prepared statement. It is assumed he has had advice and help from experienced persons. If he testifies for a group or association, his statement normally represents the contributions of highly skilled persons and, in addition, labor of another and most delicate kind—that of getting a large number of persons to agree and support him.

The unsophisticated witness who comes from "back home" to talk at a congres-

sional hearing has the appeal of novelty. Too many of them unfortunately leave that job to their business associations. Committee members can often anticipate what a witness for an association, especially a large one, will have to say. This is not to discount the effectiveness of association witnesses.

Their function in reporting industry attitudes and reactions is substantial and important. And their research is a recognized service in the legislative process which members of Congress appreciate and depend upon.

THERE are certain ground rules (unwritten, of course) that might well be staked out for the guidance of witnesses. Although this is written more with business, trade, and professional association witnesses in mind, the ground rules apply equally to others, including those subpoenaed. The latter, however, are usually flanked by counsel and others, and their problem is different anyway.

Although this article is not concerned with subpoenaed witnesses, there is a colorful story involving one of them in 1837 which might be repeated because it contrasts modern congressional procedures with the lusty turbulence of the early nineteenth century. The incident was recorded by John Quincy Adams, while serving in the House of Representatives after being President. Adams wrote:

"When Reuben Whitney was before a committee of investigation in 1837, Bailie Peyton of Tennessee, taking offense at one of his answers, threatened him fiercely, and when he rose to claim the committee's protection, Mr. Peyton, with due and appropriate profanity, shouted,

" 'You shan't say one word while you are in this room; if you do, I shall put you to death.' "

"The chairman, Henry A. Wise, added, 'This insolence is insufferable.' "

Adams commented wryly, "As both of these gentlemen were armed with deadly weapons, the witness could hardly be blamed for not wanting to testify again."

A WITNESS is essentially a pitch man and his statement is his spiel. He is talking not only to the committee and through it to Congress but also to his industry, related industries, and the general public. It is incumbent upon him to show how his ideas about his particular phase fit into the over-all problem.

He has to keep in mind what it is that the committee, his industry, and the Amer-

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ican people want to know from him. Everything he says has to be related to the public interest. Even the experienced witness too often overlooks the need for his statement to have specific personal appeal to the public.

In view of the importance of the rôle of the witness, what he says, how he says it, and the impression he makes, it might be useful to cite some "do's and don'ts." Here are some that have been worked out as the result of many conferences with Senators and Representatives, their staffs and the professional and clerical staffs of congressional committees as well as business, trade, and professional associations in Washington. Some of them would appear to be elementary. And they are. But they are listed here because too often they have been honored more in the breach than in the observance.

Do's

BE on time and, incidentally, be careful to be in the right room before the right committee. Some members of Congress are sticklers about starting hearings promptly on schedule and look askance at tardy witnesses.

Be sure you have read the bill on which you are to testify. Understand precisely its meaning and implications. This is one of the admonitions that should not be necessary.

Know the identity of the Senators and Representatives who are hearing your testimony. It is not flattering to confuse names, particularly those of such important public figures.

Be courteous, candid, complete, and honest. They are most persuasive qualities. The old cliché about it being easier to tell the truth because you do not have to remember what you said earlier is a shining axiom in the field of congressional inquiry.

Be willing to say you do not know the answer to a question and then offer to get the answer, if you think you can, for the committee promptly. No one on the committee expects you to know all the answers. You show good faith and a co-operative attitude in your willingness to get the information.

Admit mistakes. They have a human quality that cuts through the formality of a hearing to make an earnest witness more appealing.

Be brief. And be ready to summarize your prepared testimony in five minutes at most and submit the full text for the printed record.

Support your points with facts and avoid broad generalizations.

Simplify, supplement, and dramatize your prepared statement wherever possible with visual aids. They are used extensively and effectively by the Armed Services in their appearances before congressional committees.

Assume that the proposal in the bill about which you are testifying was made in good faith and that the committee members want to perfect the legislation. Regardless of politics, that is the purpose of every committee hearing.

Stick to your subject. Time does not permit of anything else.

Relax and you will very likely find the experience stimulating and enjoyable, and come away a Master in Persuasion.

Don'ts

DON'T be afraid. The Constitution, no less, is backing you in your right as

A Friend on the Committee

"If a witness anticipates that his testimony will be unpopular because of the political complexion of the committee, he should alert one or more members of the committee who are sympathetic with his point of view so that they will be on hand. There is nothing as valuable as an ally on the committee to keep the situation in hand. An open hearing often is a great source of news. This is recognized by the committees which are careful to reserve tables nearest their own for the press. Hearings in Washington are covered by the great national wire services, special Washington correspondents for important newspapers all over the country, trade journals, radio, and television."

a citizen to petition your elected representatives.

Don't be bulldozed or enticed into weakening your position no matter how unpopular it might seem at the time. Stand your ground. It is not likely that you would be bulldozed but it does happen occasionally in the parry and thrust of a public hearing.

Don't under any circumstances underestimate either the intelligence or the knowledge of the Senators or Representatives. They may play dumb and, if they do, they are "dumb like foxes." Rest assured that they could never have reached positions of such eminence and leadership unless they had better than average minds. They understand well the general field in which you are testifying and, 10 to 1, their staffs have briefed them on the main points you are going to make.

Don't deal in half-truths. The other half will very likely be brought out by a committee member to confound you. And don't try to conceal adverse information.

Don't talk about things you don't thoroughly understand. It becomes immediately evident and tends to discredit everything else in your statement.

Don't get angry no matter what the provocation. Anger may be justifiable but is always disastrous.

Don't get involved when committee members argue among themselves. Take a breather. It never pays to interfere in a family quarrel.

Don't ever reflect in any way on any member of the committee, its staff, or congressional traditions. You will invite trouble unless you remember you are there to sell ideas, not criticize.

Don't try to be funny, particularly at the expense of anyone even remotely connected with Congress. Let committee members inject the levity.

Don't interrupt a committeeman while he is questioning you. Hear him out respectfully. Eager beavers get themselves into trouble.

Don't try to use the committee hearing as a soapbox for personal publicity. You'll fall flat on your face.

Don't ignore other members of the committee in answering a question by any one of them. Remember that the question was asked by the member not only in his own behalf but also for his colleagues.

DURING the hearings of Subcommittee of the Senate Appropriations Committee in June there was an incident of a government witness who brought down on his head the wrath of the chairman for venturing to protest a line of questioning. Arthur Larson, head of the United States Information Agency, was repeatedly asked about something he had said in a speech. Here is the transcript which has a capsule lesson for all witnesses:

SENATOR MANSFIELD. Mr. Larson, I have been thinking about this speech you made in Honolulu on April 16th which reads as follows: "Throughout the New and Fair Deals this country was in the grip of a somewhat alien philosophy imported from Europe." MR. LARSON. Mr. Chairman, does this come under the category of specific justification for items under this budget?"

SENATOR JOHNSON. It does not make any difference to the committee what it comes under. You listen to the question and answer, or you are going to win an argument and lose a sale. We do not want to be lectured on how to ask questions. You are here to answer the questions that the Senator chooses to ask and in whatever category he wants to."

THERE are a few points that should be noted in connection with the witness' prepared statement. At the very start the witness should identify himself, say where he is from and whom he represents. Although there is no established form or style, all statements presented to congressional committees start something like this:

"I am John J. Johns of New York city. I am testifying in behalf of such and such an association," etc. And at this point witnesses often proceed to try to impress the committee with figures about the membership and importance of the group. These are about the only points that statements have in common. Thereafter, they vary as widely as those who offer them. The good ones are like legal briefs—they are informative, specific, and constructive.

Witnesses may bring up supporting

specialists who should be introduced and identified. It is a routine courtesy to ask and obtain permission for them to sit at the witness table, too. That makes them handy for technical questions in their specialized field. Their presence is also a morale factor in supporting and bolstering a witness.

By the time a witness goes before a committee, he should be familiar with the names and faces of its members. Although a large name plate usually identifies each committee member's place at a hearing, sometimes it cannot be seen. And a committee member may take a different seat. For that reason the witness should have a chart with thumbnail pictures which are available in advance.

THE story is told of a witness who repeatedly mistook former Senator Millikin for Senator Hickenlooper. Senator Millikin ignored it until he rose to leave. With great dignity he is said to have addressed the witness by name and commented, "My name is Millikin. I spell it MILLIKIN. It has three i's and I use all three."

It helps to read the biographical sketches in the *Congressional Directory* which give a pretty good indication of a committee member's interests and hence a clew to possible questions. It will put a witness more at ease, too, if he has gone through a mock presentation or dry run the evening before his testimony.

The Legislative Reorganization Act of 1946 requires all witnesses "to file in advance written statements of their prepared testimony and to limit their oral presentation to brief summaries of their argument."

These rules are not strictly adhered to by all of the committees. Some insist that witnesses provide the committee clerk with 50 copies of his testimony twenty-four hours in advance of their appearance. Others, aware of the last-minute rush that so often characterizes the preparation of a witness' testimony, are more lenient. In any case, witnesses should know that they are expected to bring with them at least 50 copies of their testimony and exhibits, such as charts, graphs, illustrations, etc.

IT is to the witness' advantage to get his statement to the committee clerk as early as possible. The clerk gives a copy to each member of the committee to study in advance of the hearing. Wherever possible committee staff members, in accordance with the Legislative Reorganization Act, make digests of the statement, listing its salient points for the convenience of

¶ "THE *witness' appearance before a committee is the climax of hours and hours of work. If he speaks for himself, he has probably labored over his prepared statement. It is assumed he has had advice and help from experienced persons. If he testifies for a group or association, his statement normally represents the contributions of highly skilled persons and, in addition, labor of another and most delicate kind—that of getting a large number of persons to agree and support him.*"

committee members and even suggesting a line of questioning to bring out other information.

THE requirement that witnesses "limit their oral presentation to brief summaries of their argument" is also not rigidly observed. But the wise witness will do well to do so. It will be appreciated and it will go far in helping him win friends and influence committee members —which, after all, is what he wants to do.

There is no point in a time-consuming presentation. The witness will lose his congressional audience. Committee members, dismayed at the prospect of a long statement, often turn their attention to the reading of reports and other homework or just walk out. Unless the witness is kept on by the committee members themselves, it is enough that he appear, make a good impression in a short time, and leave. For the most part the real impact of his story will be in its consideration by the committee and staff in writing the report on the bill. That is the advantage of having a prepared statement to supplement an oral presentation. Within reason the prepared statement is not limited in length. With supporting data, it makes a strong case.

Occasionally, in their initial appearance before a congressional committee, witnesses are disconcerted by the fact that committee members do not all seem to pay attention and some exchange notes, whisper, and even move around. In defense of Congressmen let it be said that this is a big occasion only for the witness and routine for the committee members. There is no discourtesy intended by the committee members. They are under great pressures and they know that they will have a chance later to examine the witness' testimony thoroughly. There is usually some member of the committee who is following the witness closely. And it is uncanny how quickly a committee member will stop a whispered conversation with another to break in and question a witness on a point that touches something in which he is particularly interested.

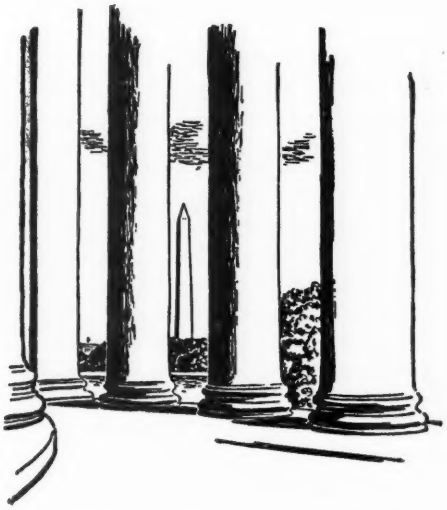
IF a witness anticipates that his testimony will be unpopular because of the political complexion of the committee, he should alert one or more members of the committee who are sympathetic with his point of view so that they will be on hand. There is nothing as valuable as an ally on the committee to keep the situation in hand.

An open hearing often is a great source of news. This is recognized by the committees which are careful to reserve tables nearest their own for the press. Hearings in Washington are covered by the great national wire services, special Washington correspondents for important newspapers all over the country, trade journals, radio, and television.

In view of this a prospective witness should plan with specialists in this field to make sure that the ideas he is advocating are pointed up for the convenience of the press.

Bearing in mind that it is both a privilege and an act of good citizenship in presenting facts to Congress, witnesses may well take pride in their part.

Washington and the Utilities



Sea Water and Sputniks

DESPITE the current furor over the Russian leadership on space satellites, a comparatively little-noticed meeting held in Washington, D. C., early in November held promise of revolutionary developments of far more practical importance to the inhabitants of this globe now and in the future. This was a convocation of international scientists and technicians dealing with the problem of desalting sea water. And it was held under the joint sponsorship of the National Academy of Sciences, the National Research Council, and the Office of Saline Water. For some years the Interior Department has been fostering experiments in reducing the hitherto prohibitive cost of obtaining water for either drinking or irrigation from the ocean. Its newly established Office of Saline Water has been given appropriations for encouraging work in this field.

And the work of specialists and technicians in other countries has naturally invited comparison. Indeed, countries in North Africa, the Near East, the Indian subcontinent, and Australia have far more at stake than even our own chronically water-short states of the Southwest.

Obviously, if California, for example, could tap the Pacific for unlimited fresh water supply to her coastal cities, the fresh water of the Colorado and other interior rivers could be turned inland for more consumptive use in the arid regions of Arizona, Nevada, and Texas. Likewise, on our East coast, the increasingly congested "extraurban" strip of cities from Boston to Washington might some day look to the Atlantic for at least supplemental fresh-water supply.

FROM the standpoint of present and long-range benefits for the human race, therefore, the solution to the problem of a commercial and practical desalting operation easily rivals, if it does not surpass, the lasting significance of the Sputnik race. It would have been pleasant news for a change, therefore, if the Washington meeting had produced definite indications that the problem had been solved or was about to be solved in the very near future. But the evidence at hand, while promising, was quite conservative in terms of years and cost per gallon of sea water converted.

THE gist of the Washington meeting seemed to be that desalting sea water has yet to come within striking distance of competition with conventional river water filtration. This conservative view was emphasized by a number of the 42 papers on conversion of salt water to fresh drinking or irrigation water presented at the Washington symposium. But there was more optimistic opinion elsewhere. The impact of any breakthrough in this area, upon the future economy and pattern of industrial and residential location, could be just as important as the space satellite development.

Probably the most optimistic news of progress came early last month from the Maxim Silencer Company of Hartford, Connecticut, which announced the development of a system capable of converting sea water to fresh water for an urban system "at something around 20 cents a thousand gallons." While this is more than double average filtration costs for municipal water supply, it represents a tremendous advance. Yet such a process would be limited to by-product use in connection with a heat source, such as steam power or ship boilers. The Connecticut company is one of the leading suppliers of sea water distillating systems to the Navy and merchant shipping lines. And that is probably where its method—described as an evaporation-vacuum system—is likely to come into earliest commercial use.

THE meeting in Washington was somewhat scientific in tone. It was opened by Assistant Secretary of Interior Fred G. Aandahl. V. F. Estcourt of the Pacific Gas and Electric Company was the chairman of the discussion of distillation processes. Among other desalting processes—in addition to evaporation and distillation—were membrane processes, solar distillation, freezing, and other developments.

O. B. Volckman, of National Chemical Research Laboratory, Pretoria, South Africa, explained a membrane process which could be used in areas where a by-product heat source would not be practical. He claimed a conversion cost of 30 cents per thousand gallons. This process uses a simple, inexpensive membrane to filter water of salt content. A group of South African mining companies are planning a 2.8 million gallons a day plant to start in 1958. Ionics, Inc., an American company holding similar membrane processing patents, indicated that progress comparable with the South Africans' could have been developed in the United States if similar large-scale experiments had been conducted.

There was an official warning against overoptimism from two government officials, who stressed the need for continued government assistance on desalting research. David S. Jenkins and Edgar A. Cadwallader, both of OSW, said it may be necessary to continue government assistance for the program "considerably beyond the point at which it had originally been hoped that private industry would take over." While Jenkins and Cadwallader professed to see some "tapering off of interest and activity" in this field, the presence of 250 authorities from this country and abroad spoke well for the present stage of the science. Allen Cywin, also of OSW, said the trend is turning from purely marine and military use toward potential large-scale civilian applications.

Hell's Canyon Progress

EFFORTS of government power proponents to block the Idaho Power Company's Snake river power project

continue to prove futile. Last month the FPC turned aside a request from two Pacific Northwest U. S. Senators to hold up approval of Idaho Power's financing arrangements for its Brownlee dam in Hell's Canyon. The request came from Senator Magnusen (Democrat, Washington), chairman of the Senate Interstate Commerce Committee, and Senator Murray (Democrat, Montana), chairman of the Senate Interior Affairs Committee, both strong supporters of a high federal Hell's Canyon dam.

Despite previous complaints from government power zealots in the area about Northwest power shortage dangers, the two Senators subsequently urged the FPC to defer approval until the company can show that its project will not need a federal subsidy. They charged that a 300,000-kilowatt power surplus, which the new dam will create during the 1958-59 winter, could only be resold by BPA at an allegedly lower cost than BPA could purchase it from Idaho Power. The FPC nevertheless went ahead and authorized the company to issue $15 million in bonds and to sell 225,000 shares of stock to finance the project. The commission said the economic feasibility of the project had been fully explored in earlier hearings. The SEC was expected to follow suit and permit registration of the bonds and stock.

Boiler Fuel Battle

THE electric utility industry may find itself somewhat in the middle in a battle which is developing between the natural gas producers and coal producers. Electric utilities for some years have been making liberal use of natural gas as boiler fuel whenever it has become available at prices competitive with or lower than coal fuel delivered at the site of their generating plants.

In the last session of Congress, when the Harris Bill to relieve gas producers from the full burden of utility-type regulation by the FPC was under way, Congressmen from coal states were very busy with a project of their own. The coal field Congressmen saw in this scrap between the avowed champions of gas consumers and gas producers, respectively, a chance to slip in some statutory protection for the coal business under the politically sacred name of conservation of our irreplaceable natural resources.

Representative Harley O. Staggers (Democrat, West Virginia) introduced a bill in the House (HR 7105) which would have subjected direct sales of natural gas by pipeline companies to FPC control and prohibit low-cost sales of natural gas to industrial users. That, of course, would amount to a prohibition of sale of natural gas for boiler fuel to electric companies. Such sales would have been condemned as "an inferior use" of a natural resource and therefore a waste which should be prohibited by law.

The Staggers Bill got no place in the House. It was voted down by more than 3 to 1 in the House Committee on Interstate and Foreign Commerce. It is still likely to make no further progress if, as, and when the House takes up the Staggers Bill for floor action at the next session. But it is to be expected that the same kind of amendment will be introduced in the Senate when a companion or opposite number of the Harris Bill is taken up in that chamber, if it is taken up.

THE coal industry has a smart and compact group. And while the members are very much in the minority as compared with the gas consumer and gas producer states' Congressmen, they are in a position to trade with either side and could conceivably wield a balance of power on a close vote.

Robert E. Lee Hall, general counsel of the National Coal Association, has contended that unregulated direct industrial sales of gas are against the public interest, partly on the ground that they are accelerating the exhaustion of natural gas reserves and partly because sales of natural gas to industry are injurious to the coal industry. Hall sought to persuade the House committee last year that his position was supported by both the FPC and the Office of Defense Mobilization.

For those not familiar with gas industry operations, the question naturally arises as to why both pipeline and producer companies are willing to make such cheap rate concessions for boiler fuel customers. The answer so far has been that high average annual load can only be maintained by the long pipeline operators when they can supplement slack periods or consumer use by sales for off-peak use. If such sales were banned, pipeline operations would become very much more expensive on the whole and even the distributing gas utilities would have to pay a higher rate to the pipeline companies to compensate for the poor load factor.

TVA Board Filled—Conditionally

WHAT are the chances for Senate confirmation of the two interim appointees to the three-man board of the Tennessee Valley Authority? The perspective and anonymous speculators, who give hit-and-run comments under the name of Washington observers, have been busy on this ever since President Eisenhower completed the board's membership last month. Speculation is to the effect that the President appointed Dr. Frank J. Welch, dean of the College of Agriculture of the University of Kentucky, as a counterweight to his previous recess appointment of Arnold R. Jones.

The TVA zealots in Congress, headed by Tennessee's Democratic Senators Kefauver and Gore, have made no bones about their reservations with respect to Jones. They think he is still too much influenced by the conservative Budget Bureau, from whence he came. They swung enough weight in the Democratic Senate to stall a confirmation vote, pending what might loosely be called a period of "good behavior" on the part of Jones until the Senate reconvenes next year.

The administration naturally did not take kindly to this sort of cavalier treatment of a presidential appointment by the Senators. The Senate's duty under the Constitution, the administration feels, is to confirm or deny confirmation. It has no right to put anybody on probation, so to speak—which is another way of suggesting that pressure might be used to influence policy decisions simply by employing confirmation votes as bait.

Rather than make an issue of it, however, the speculation is that the administration is willing to settle for an even break. The new appointee, Dr. Welch, is not only a Democrat of long standing, but he professes great enthusiasm for the TVA and all its works and pumps, locks and stocks, and everything else.

WILL Senators Kefauver, Gore, and the rest of the so-called power bloc go along for this? The TVA Senators have been noncommittal. Dr. Welch has been warmly endorsed by Kentucky's two Senators, Cooper and Morton. Kefauver and Gore would like to hear more from Dr. Welch on the subject of TVA. So far he has only said that there is plenty of room in our economy "for both" government and private power development.

Telephone and Telegraph

USITA Takes Aim on Excise Taxes

THE United States Independent Telephone Association is once more mustering its forces for a campaign to urge repeal of telephone excise taxes. At its Chicago convention in October, the USITA's board of directors authorized positive action to seek removal of the taxes. Secretaries of the various state telephone associations will assist in the united effort to show that repeal of the excise taxes is long overdue. USITA will have the support of the National Association of Railroad and Utilities Commissioners, which once more went on record at its convention in favor of repeal.

The basic arguments that will be used to support the position of the telephone companies include findings of the Gallup Poll that the tax on telephone communications is the most unpopular of all excise taxes, because it adds to the cost of a genuine necessity in the American way of living. Telephone communication is essential to commerce, industry, and the social life of the nation. Clearly, it is not a luxury item, although it is subject to an excise tax which normally applies to such luxuries as furs, cosmetics, alcoholic beverages, etc.

State regulatory authorities have condemned this tax as "inimicable to the maintenance of reasonably priced and nondiscriminatory communications service," because it adds unreasonably to the rates and charges which they have carefully established. The tax is discriminatory because it singles out the telephone from other essential household utility services, like water, gas, and electricity.

The telephone companies argue that the tax was enacted primarily to assist in conserving critical war materials during the war. It was an emergency measure and should not be permitted to become a permanent part of the tax revenues. It is also pointed out that the tax is a consumer tax. Its repeal would result in a direct saving for the telephone user. No part of the tax saving could be retained by the telephone companies.

ATA Opposes Frequency Changes

PLANS of the Federal Communications Commission to shift the frequency for a majority of transit two-way radio systems have encountered strong opposition from the American Transit Association. The frequency change, if put into effect, would require 50 transit systems using two-way radio service to purchase new equipment at considerable expense to hard-pressed transit companies.

The serious implications of the FCC's recommendations resulted in an emergency meeting of the ATA's committee on radio communications in New York recently to study the proposals and make recommendations for association action. A formal statement of opposition will be filed with the FCC.

Briefly, the changes proposed by FCC in its new rule would reduce the separation between assignable frequencies in the 42-50-megacycle band, effect changes in the 25-50-megacycle and 150.8-152-megacycle bands, and effect other changes relating to the use of frequencies in the 25-50-megacycle band. Fifty transit companies operate two-way equipment at four frequencies in the 44-megacycle band. These would be shifted if the FCC rule is adopted. Thirty-five companies operate at 30-31 megacycles. Certain channels, including those in the 44-megacycle band, would be "split." Now assigned on a 40-kilocycle separation basis, it is proposed to assign them in the future on a 20-kilocycle separation basis, thus making available additional channels in between the old ones.

THE four frequencies in the 44-megacycle band presently available to transit are proposed to be transferred, together with the intervening "splits," to interurban property carriers. Urban carriers would be compensated for this loss with three frequencies in the 150-megacycle band on a 30-kilocycle separation basis. Commenting on this feature of the proposal, the FCC said: "On the basis of present usage of available frequencies, it is believed that the three-for-four proposal is fair and equitable." Stations on the lost 44-megacycle frequencies would be permitted to continue operation for a period not to exceed five years.

The FCC proposes not to accept, in the future, any frequency assignment plan which "does not provide for assignment in all areas of substantially all frequencies available to the service." Under the plan developed by ATA's committee and used for a number of years, recommended assignments are made in so far as possible on an area basis to minimize skip interference. However, under the ATA plan, all frequencies could be used in any area provided every licensee had the most modern equipment.

Representatives of the transit industry were among those participating in the eighth annual meeting of the Professional Group on Vehicular Communications. The meeting was held in Washington, D. C., on December 4th and 5th. A frank discussion of present and future radio frequency requirements by outstanding personalities in the vehicular radio field highlighted the meeting, which was described as one of the most important public meetings ever held on mobile radio. The meeting attracted hundreds of industrial, public safety, land transportation, common carrier, military, and other types of radio users from all parts of the United States.

THE biggest drawing card for the meeting was a two-hour panel discussion moderated by Commodore E. M. Webster, former member of the FCC and an expert on radio frequency allocations. Top representatives of the FCC, radio equipment manufacturing industry, the engineering consultant area, the common carrier communications industry, and the mushrooming private radio operating field, taking part in the discussion, were FCC Engineer Edward W. Allen, Jr.; Motorola Executive Vice President Daniel E. Noble; Washington engineer consultant, C. M. Jansky, Jr.; AT&T Radio Engineer Francis M. Ryan; and Atlantic Refining Company Communica-

tions Manager Mason S. Collett, who spoke for the nation's private radio users.

Subscription TV

RKO TELERADIO PICTURES, INC., is the latest FCC applicant to file for authority to participate in toll television tests. The company, licensee of six television stations, is the first major broadcaster to request permission to test toll TV. In announcing the company's decision to enter the subscription TV field, RKO Teleradio President Thomas F. O'Neill said: "Toll TV is already with us and RKO Teleradio proposes to waste no time or effort in attempting to stem the tide of the inevitable." The major broadcasters have for the most part expressed strong opposition to subscription TV.

The FCC recently began accepting applications for a test of toll TV, but announced that there will be no action on the pay-as-you-see petitions until next March. Under the ground rules recently laid down by the FCC, trials will be limited to a three-year period and no new subscription system will be permitted to try out in more than three cities. The tryout cities must have four top-quality television outlets in operation.

Under the rules, more than one method of subscription TV may be tried in the same city and more than one station as a trial city may participate in testing a particular system. Charges and conditions of service must be applied uniformly to all subscribers. So far, five new systems of pay TV already have been proposed to the commission.

RKO Teleradio disclosed it has already begun negotiations with subscription television system companies, but did not indicate how far the talks have gone, or which of the five companies making the systems had been consulted. RKO's system of broadcast would be through the air rather than over cables on a closed circuit.

Long Lines Expansion

AUTHORITY to build additional communications facilities at a cost of $60 million has been requested in an application filed with the FCC by the American Telephone and Telegraph Company's Long Lines Department, 17 other Bell system companies, and the Carolina Telephone & Telegraph Company.

James E. Dingham, director of operations for Long Lines, said that Long Lines' share would amount to about $52 million and that the proposed construction was only a portion of the program for 1958 and early 1959. Installations covered in the application would provide about 4 million channel miles of telephone facilities, 2.2 million miles of telegraph channels and additions to television facilities.

Long-distance traffic along principal routes was up about 9 per cent during the current year. "The facilities proposed will provide about 7,000 additional circuits to meet an anticipated increase in long-distance usage in 1958 and early 1959," Dingham said.

Major cable projects listed in the filing included the conversion of several coaxial cable routes to a system which would triple their present capacity. These are located in Virginia, North Carolina, Georgia, Mississippi, and Texas. The application also touched on plans for construction of a number of radio relay systems in the East and Southeast. These would connect with "express routes" recently built through the open country to bypass some of the nation's larger cities.

Financial News and Comment

By OWEN ELY

"Rolling Readjustment" or Real Depression?

THE question as to whether business and industry are headed for a real postwar depression of the type anticipated by Sewell Avery, or whether we are only having another "rolling readjustment" similar to that of 1954, has aroused considerable debate recently. A majority of the economists assembled at a University of Michigan seminar recently agreed that the business readjustment or recession should run its course by about the middle of next year. Only comparatively small declines in production and profits were forecast, with a moderate increase in unemployment. On the other hand, Harold Dorsey of Argus Research reports that new orders for steel are now running below 60 per cent of capacity, which he interprets to mean that "deterioration in business over the next six months is likely to be sharper than we—or anyone else we have heard of—were anticipating."

Currently, steel operations have declined to 76.8 per cent in the week ended November 22nd, compared with 100.1 per cent a year ago. The FRB index of industrial production for October was 142 compared with 144 in September and 146 a year ago. While layoffs in durable goods factories reduced manufacturing employment about 2.3 per cent this was offset by more jobs in trade, finance, etc. However, *U. S. News* forecasts that insured unemployment will increase from 2.5 million to 4 million next February, highest in four years. Elimination of overtime pay is reducing weekly pay in some lines by 2 per cent or more.

Personal income in October declined to a seasonally adjusted annual rate of $345.5 billion, 1 billion lower than in September, following a decline of .3 billion in September. However, income remained 3½ per cent above a year ago. Regarding the outlook for next year, "built-in" pay raises will help offset unemployment; it is estimated that 1,197 wage contracts guarantee pay raises averaging about 8 cents an hour in 1958.

CONSTRUCTION is one of the most cyclical phases of the economy. McGraw-Hill's October survey indicated that industrial construction next year will decline

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about 7 per cent; manufacturers will spend about 16 per cent less, while electric and gas utilities will spend 3 per cent more, and other nonmanufacturing industries will also make a fair showing. Industries' planned expenditures of $36.1 billion for next year remain very high compared with earlier years. Incidentally, most companies expect to spend as much or more for research and development next year as in 1957. Spending for public construction, homes, office buildings, schools, etc., should be aided by easier credit and F. W. Dodge & Co. forecasts a gain of 8 per cent in residential building. On an over-all basis, the Commerce Department estimates total construction in 1958 at $50 billion, up 5 per cent.

Retail sales are considered the bulwark of our prosperity, and last month they totaled about $16.8 billion, according to a preliminary Commerce Department estimate. While this was about 2 per cent below September after seasonal adjustments, it remained 4 per cent higher than a year ago—part of this gain being due to higher prices. Chain store sales in October were 4.9 per cent above a year ago, and for the first ten months of 1957 were 6.8 per cent ahead of last year. Grocery chains made the best showing for the month with an increase of 9.9 per cent, and drugstores also made a strong showing with a gain of 14.8 per cent. Federal Reserve Board figures showed a dip of 1 per cent in department store sales for the four weeks ended November 2nd. Sales of house furnishings have declined sharply since midsummer, including furniture, appliances, TV sets, etc. In general, retailers expect the physical volume of sales this year to be about the same as in 1957, and to decline slightly in the first half of 1958.

CONSUMER debt might conceivably prove to be the Achilles' heel of the present economy as security and mortgage loans were in 1929. Total consumer credit continued to rise slowly in September, bringing the total to $43 billion, nearly $3 billion over a year ago. Instalment debt repayments, as a percentage of personal income after taxes, increased to 13.4 per cent in September compared with about 3 per cent in 1945, 8 per cent in 1940, 5 per cent in 1933, and only 7 per cent in 1929.

To what extent will the United States be affected by troubles abroad—the near bankruptcy of the French government, England's weakened financial position and the rising strength of the Labor party, inflationary trends and foreign trade difficulties in many countries, etc.? Failure of a large Austrian bank was one of the earlier signals of the 1929 debacle. However, the U.S.A. is now a far more important segment of the world economy than in 1929 and is able to bolster ailing nations through special loans and grants. Latest developments in France seem more optimistic and perhaps that country can pull itself together and stop runaway inflation.

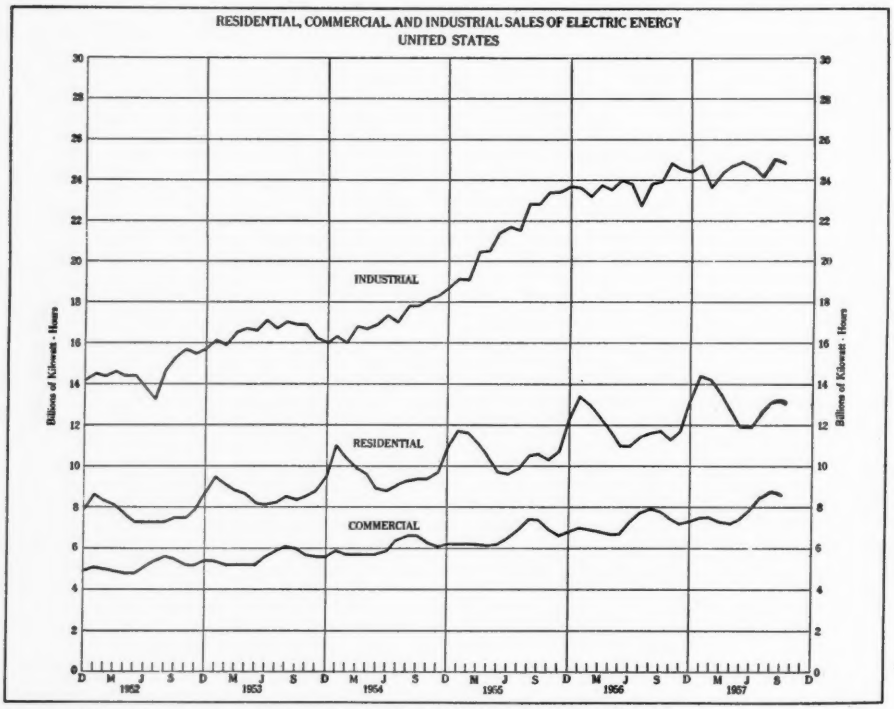
Two industries have been counted on to restore waning business confidence, as they did in 1954—automobiles and housing. Auto sales in October and November succeeded in clearing out heavy stocks of 1957 models with sales about 15 per cent above last year, but inventories of new cars remain heavy. Housing starts in October were at the rate of 1 million a year, maintaining the level of the past six months, despite disappointing results with FHA loans.

WHILE the Federal Reserve may not have fully succeeded in its fight against inflation (thus far the cost-of-living index continues to edge a little higher) obviously, the board has decided that the decline in business is a greater evil—the Reserve system is required by law to try

to maintain employment. In any event, the credit situation is becoming easier. In the first half of 1957 bank loans of reporting member banks rose $677 million or at about one-quarter the rate of 1956, and in July and August declined about half a billion dollars, while last year they were showing little change. Since August and up to November, loans have dropped about $400 million, while last year they were up over a billion dollars. The recent cut in the rediscount rate from 3½ per cent to 3 per cent by four eastern banks gave the bond market a needed tonic, clearing out the remainder of the slow-moving $250 million telephone debentures. A few days later other slow issues were quickly absorbed after an optimistic statement by Chairman Hayes of the New York Reserve Bank.

The decision of the government to "firm up" defense expenditures and perhaps spend an extra billion or so on missile development (cutting down on nonmilitary expenditures) is a plus factor, since the "stretch-out" of defense contracts had been an element of uncertainty in the business outlook for 1958.

SHOULD the utilities retrench a little at this time? It certainly would seem advisable to restudy next year's construction plans, in the light of new utility budgetary estimates soon to be prepared. Does the electric utility industry really need the 20 per cent reserve of generating capacity to which its long-term construction program is geared? With the increasing amount of interconnection could this perhaps be re-



Source, Federal Power Commission (September estimated by FORTNIGHTLY*)*

duced to 15 per cent or less? The question as to why 20 per cent is still necessary would make an interesting subject for an engineering study by the EEI or some appropriate agency.

At least two large utilities encountered sudden difficulties last summer in servicing the sharp rise in their air-conditioning loads during a heat wave. But it is understood that part of this difficulty arose from the old policy of using the summer period for maintenance work. Possibly revision of the maintenance schedule would help to avoid recurrence of these difficulties.

Utility Convertible Issues Popular in 1957

At least nine issues of convertible debentures and six convertible preferred stocks totaling $350 million in amount, had been offered by utility companies in 1957 up to a recent date, as indicated in the table on page 944. The conversion feature is a successful device to avoid increasing the mortgage debt ratio and to provide "painlessly" for a future increase in common stock equity after conversion.

Usually the conversion feature enables the company to obtain a slightly lower interest cost (although the shorter maturity is also a factor). Thus on August 28th, El Paso Natural Gas sold convertible sinking-fund debentures with a Baa rating to yield only 5.25 per cent, while a few days earlier Iowa Southern's similarly rated first mortgage issue was retailed to yield 5.70 per cent, and in June two first mortgage Baa issues yielded 6 per cent. (It is quite possible, however, that the sinking-fund feature may have been a factor in the lower coupon.)

Is there any general rule about fixing the conversion price, in relation to the price of the common stock at that date? Apparently this ratio has been subject to considerable variation. (See table.) In fixing the conversion price the management has to take into account the popularity of the common stock and its recent price range in relation to the general market trend. Electric and gas utilities, when they sell a convertible issue on a subscription basis, usually fix the conversion price about one day before the record date for issuance of the rights, so as to retain flexibility to meet changing market conditions.

Arkansas Louisiana Gas to Make Gas Air Conditioners

The current trend toward diversification into nonregulated fields by gas utilities is well illustrated by Arkansas Louisiana Gas Company's recent purchase of Servel's gas air-conditioning division at Evansville, Indiana, for $4 million. In a recent address before the New York Society of Security Analysts, Chairman of the Board W. R. Stephens stated:

> In the first place, we know that the Sun Valley all-year absorption unit has been developed to the point that it is a wonderful product for the home. Of 2,500 of the new models put into service, there have been only three failures. In the second place, there is the problem of low summer gas sales faced by us and by every other gas utility. Gas air conditioning seems to be the answer to this problem and the eventual leveling of the gas company's load factor.
>
> Home-building forecasts for the immediate years ahead indicate that approximately one million homes will be constructed each year. Currently about 25 to 30 per cent of these have central air conditioning. This means that 300,000 homes per year will have central heating and air conditioning. If we can serve as much as 10 per cent of this

market, it means we can sell 30,000 Arkla-Servel Sun Valley 3½- and 5-ton units. By contrast to this, Servel last year sold about 2,400 units. . . .

The Arkla plant in Evansville is back in production. We have reduced our prices on these units about 20 per cent to the point that they can be installed competitively with any similar unit. Our figures show that 4,600 units is the approximate break-even point in the manufacturing process, but we are confident that sales in 1958 will go well over that. . . . We are beginning studies now as to how we can raise production to a rate of 20,000 units per year, so that we will be ready for the market as it develops. Nor will we be content with the 3½-ton, 5-ton, and 25-ton units now being produced. We are studying how we can produce units up to 700 tons' capacity for large buildings and industrial loads.

ARKANSAS LOUISIANA GAS also has gone into the cement business and is beginning to lay the foundation for a $12 million plant in Arkansas with an annual capacity of 1.4 million barrels a year, which should be in operation within a year. The plant will buy a substantial amount of gas from the parent company, firming up the summer load and improving the system load factor. Moreover, Arkansas Louisiana will build an 8,000-kilowatt generating station (using natural gas as fuel) to supply electricity to the cement plant, at an operating cost of about 3.9 mills.

The company has also been active in exploring for new gas reserves, having obtained from the legislature (superseding

CONVERTIBLE UTILITY ISSUES OFFERED IN 1957

Offering Date	*Amount (Mill.)*	*Issue*	*Offering Price*	*Rights Basis*	*Maturity Yield*	*Div. Yield*	*Initial Conversion Price of Common Stock*	*Price Of Common Before Offering Date*	*% Conversion Price Over Market*
1/11	$46	Niagara Mohawk Power 4⅝s 1972	100	$100 Deb. for 25 shs.	4.63%		31¾	30	6%
1/25	2	Western L. & T. 5.20% Conv. Pfd.	25	1-for-8		5.20%	31¼	33⅜	—
2/20	2	Central Electric & Gas 4⅞ Conv. Sub. Deb. 1971	98.70	—	5.00		17½	17	3
2/28	55	Consolidated Edison 4½% Conv. Deb. 1972	100	$100 Deb. for 25 shs.	4.50		45.45	44½	2
3/6	16	Lone Star Gas 4.84% Conv. Pfd.	100	1-for-40		4.84	33⅓	31¾	5
3/19	30	El Paso Natural Gas $5 Conv. Pfd.	100	1-for-56		5.00	33⅓	30½	9
5/16	45	General Telephone Corp. 4½% Conv. Deb. 1977	100	$100 Deb. for 30 shs.	4.50		46	43¼	6
6/15*	9	General Telephone Corp. 5.28% Conv. Pfd.	50	**		5.28	45.45	43½	4
6/19	20	Texas Eastern Trans. 5.75% Sub. Conv. Pfd.	100	—		5.75	25	25¼	—
6/20	10	Montana-Dakota Util. 4⅞% Conv. Deb. 1977	101	—	4.80		27	26⅜	2
8/28	60	El Paso Natural Gas 5¼% Conv. Deb. 1977	100	$100 Deb. for 29 shs.	5.25		35	31¾	10
9/12	12	Westcoast Transmission 5½% Sub. Conv. Deb. 1978	104	—	5.19		35	—	—
10/16	35	Consumers Power 4⅝% Conv. Deb. 1972	100	$100 Deb. for 25 shs.	4.63		47	44⅜	6
10/10	3	Rockland L. & P. 5¾% Conv. Pfd.	100	1-for-60		5.75	19¼	18¼	5
11/1	5	Otter Tail Power 5¼% Conv. Deb. 1967	100	$100 Deb. for 14 shs.	5.25		22+	24	—

*Approximate date.
**Offered to preferred stockholders of Peninsular Telephone Company on basis of one-half share preferred for each share of Peninsular preferred.
+After January 1, 1959, in part.

a court decision) the right to use the fair field price principle in its utility operations. In the first months of 1957, 31 wells were completed of which 24 were oil, four gas, and three dry holes. An important gas-condensate discovery was made, opening up the new Calhoun field in Ouachita parish, Louisiana. Total gas reserves under this discovery well are estimated at 55 billion cubic feet, with liquid reserves of 5 million barrels.

The company has separated its utility and nonutility operations in its financial statements, showing earnings from each division separately. The report to stockholders for the first six months of 1957 showed net income of $2,290,123 from the utility division and $2,158,814 from the nonutility division.

"Degree Days" Important Factor in Gas Earnings

THE interim share earnings reports of many natural gas utilities have registered declines this year, due in large part to the effects of warm weather during the 1956-57 heating season compared with 1955-56. Utility analysts would like to know to what extent the weather was the cause of these declines, and to what extent they were due to other factors such as increases in the cost of gas from suppliers.

One company, Alabama Gas, recently estimated that its 1956 share earnings were increased some 25 cents by a cold winter, while in 1957 they were reduced by warm weather. Doubtless a cold winter followed by a warm winter has accentuated the change in earnings for some other companies as well. It would seem worth while for gas companies to issue information more accurately and more frequently regarding the effects of weather and possibly to advise stockholders what the earnings would have been if based on normal weather.

Is there any way in which these erratic fluctuations in earnings could be normalized or reduced? Would it be possible to adjust rates charged householders for heating so as to reflect the local number of degree days? This would require action both by the industry and by regulatory authorities and any such program would require considerable research and preparation. One method might be to set up a counterpart of the "commodity rate" used for industrial customers, combined with a "demand" charge, so as to reduce fluctuations.

ANOTHER solution might be for individual companies to set up earnings reserves for warm winters, somewhat similar to the storm reserves set up by Florida Power Company, Long Island Lighting, and others. Weather conditions can be equally disastrous to earnings, whether in the guise of abnormally warm weather or violent storms. It appears likely that regulatory authorities might be more favorably inclined to the use of such reserves than to the development of a special rate schedule as suggested above.

As Mark Twain said, "everybody complains about the weather but nobody does anything about it." Perhaps the gas companies can do something about it. If they cannot, at least they could supply more complete information, either textually or by footnote, to explain the sharp changes in share earnings, which are apt to disquiet investors and make gas stocks less popular marketwise.

SEC to Study Stock Setup

THE Securities and Exchange Commission called hearings recently to determine whether preferred stockholders in

American Natural Gas Company hold "unfair" voting power in the utility and whether its corporate structure is "unduly" complicated.

In its order, the SEC reported American Natural's corporate structure last June 30th consisted of 4,863,246 common shares, or 62 per cent; $32,978,914 of capital surplus, or 16.8 per cent; $30,380,428 of earned surplus, or 5.4 per cent; and 27,481 shares of nonredeemable cumulative preferred stock, or .3 per cent.

RECENT FINANCIAL DATA ON GAS UTILITY STOCKS

Annual Rev. (Mill.)			11/13/57 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1951-56	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
		Pipelines									
$ 4	O	Ala.-Tenn. Nat. Gas	19	$1.20	6.3%	$1.42Je	—	14%	13.4	85%	40%
16	O	Commonwealth N. G. ...	31	1.60	5.2	2.92Je	7%	X	10.6	55	39
17	O	E. Tenn. Nat. Gas	8	.60	7.5	.85Se	4	X	9.4	71	19
19	O	Gulf Interstate Gas	9	.50	5.6	.77De	—	—	11.7	65	18
71	S	Miss. River Fuel	30	1.60	5.3	2.33De	16	8	12.9	69	50
80	S	Southern Nat. Gas	37	2.00	5.4	2.45Se	NC	4	15.1	82	46
268	O	Tenn. Gas Trans.	26	1.40	5.4	1.91Se	—	18	13.6	73	20
175	O	Texas East. Trans.	22	1.40	6.4	2.03Je	D7	3	10.8	69	24
71	O	Texas Gas Trans.	19	1.00	5.3	2.16Se	D2	4	8.8	46	27
88	O	Transcont. Gas P. L.	18	1.00(u)	5.6	1.67Se	30	19	10.8	60	19
		Averages			5.8%				11.7	68%	
		Integrated Companies									
158	S	American Nat. Gas	48	$2.60	5.4%	$3.70Se	D20%	13%	13.0	70%	34%
50	A	Arkansas Louis. Gas	26	1.20(j)	4.6	1.60Je	11	23	16.3	75	56
47	O	Colo. Interstate Gas	43	1.25	2.9	4.56Je	D16	36	9.4	27	35
343	S	Columbia Gas System ..	15½	1.00	6.5	1.30Je*	D11	7	11.9	77	46
7	O	Commonwealth Gas	6	(q)	—	.54De	107	D	11.1	19	76
12	S	Consol. Gas Util.	13	.90	6.9	1.45Jy	D2	—	9.0	62	64
266	S	Consol. Nat. Gas	40	1.90	4.8	3.51Je	6	4	11.4	54	65
186	S	El Paso Nat. Gas	29	1.30	4.5	2.02Ma	10	7	14.4	64	27
44	S	Equitable Gas	25	1.60	6.4	2.13Je	D11	4	11.7	75	36
17	O	Kansas-Nebr. Nat. Gas ..	32	1.80(r)	5.6	2.48Se	D2	3	12.9	73	30
95	S	Lone Star Gas	33	1.80	5.5	2.38Se	1	5	13.9	76	43
25	S	Montana-Dakota Util. ..	20	1.00	5.0	1.45Je	D3	19	13.8	69	32
23	O	Mountain Fuel Supply ...	21	1.20	5.7	1.68Je	NC	9	12.5	71	53(s)
81	S	National Fuel Gas	17	1.10	6.5	1.35Se	D19	8	12.6	81	62
113	S	Northern Nat. Gas	52	2.80	5.4	3.73Je	10	7	13.9	75	34
43	S	Oklahoma Nat. Gas	24	1.50	6.3	1.79Se	D16	6	13.4	81	34
113	S	Panhandle East. P. L. ...	40	1.80	4.5	2.75De	10	16	14.5	65	37
13	O	Pennsylvania Gas	21	1.20	5.7	2.26De	40	D	9.3	53	64
166	S	Peoples G. L. & Coke	39	2.00	5.1	2.90Je	D12	7	13.4	69	42
34	O	Southern Union Gas	24	1.12	4.7	1.52De	D10	9	15.8	74	35
273	S	United Gas Corp.	31	1.50	4.8	2.46Se	11	7	12.6	61	41
		Averages			5.3%				13.3	68%	
		Retail Distributors									
28	A	Alabama Gas	25	$1.60	6.4%	$2.20Je	D10%	31%	11.4	73%	42%
44	O	Atlanta Gas Light	26	1.60	6.2	2.17Au	D18	11	12.0	74	36
5	O	Berkshire Gas	15	1.00	6.7	1.51My	7	46	9.9	68	35
6	O	Bridgeport Gas	26	1.60(r)	6.2	2.23Je	D16	48**	11.7	72	43
4	O	Brockton-Taunton Gas ..	14	.90	6.4	1.29De	32	60	10.8	70	40
59	S	Brooklyn Union Gas	33	2.00	6.1	2.71Se	D8	6	12.2	74	47
1	O	Cascade Nat. Gas	6	—	—	Def.De	—	—	—	—	13
36	O	Central El. & Gas	14	.90	6.4	1.58Je	D8	9	8.9	57	17
12	O	Cent. Indiana Gas	12	.80	6.7	1.04Je	D7	4	11.5	77	65
5	O	Chattanooga Gas	4½	.30	6.7	.37My	D21	14	12.2	81	45

Annual Rev. (Mill.)		(Continued)	11/13/57 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1951-56	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
64	O	Gas Service	20	1.36	6.8	1.63Se	D48	0	12.3	83	40
7	O	Hartford Gas	35	2.00	5.7	3.01De	39	5	11.6	66	48
2	O	Haverhill Gas	21	1.32	6.3	1.90Se	5	2	11.1	69	58
31	O	Houston Nat. Gas	37	1.50	4.1	2.26Jy	24	6	16.4	66	22
17	O	Indiana Gas & Water	16	1.00(k)	6.3	1.40Se	D13	9	11.4	71	45
45	S	Laclede Gas	13	.80	6.1	1.14Je	D10	7	11.4	70	33
4	O	Michigan Gas Util.	17	1.05	6.2	1.22Se	D21	14	13.9	86	38
5	O	Midsouth Gas	10	Stk(o)	—	.65Ap	4	D	15.4	—	39
42	O	Minneapolis Gas	24	1.40	5.8	2.13Jy	D2	14	11.3	66	38
15	O	Miss. Valley Gas	16	1.12	7.0	1.37Se	D29	5	11.7	82	30
4	O	Mobile Gas Service	18	1.00	5.6	1.23Se	—	D	14.6	81	33
7	O	New Haven Gas	30	1.80	6.0	2.26De	D6	10	13.3	80	66
12	O	New Jersey Nat. Gas	23	1.40(i)	6.1	2.36Ma	12	—	9.7	59	32
80	O	No. Illinois Gas	16	.88	5.5	1.36Se	D8	—	11.8	65	54
8	O	North Penn Gas	9	1.00	11.1	1.02	23	7	8.8	98	56
224	S	Pacific Lighting	36	2.00	5.6	2.04Se	D31	14	17.6	98	38
19	O	Pioneer Nat. Gas	23	1.40	6.1	2.02De	15	17	11.4	65	39
13	O	Portland Gas & Coke	13	.60	4.6	.99Se	D6	8	13.1	61	36
2	O	Portland Gas Lt.	8½	.50	5.9	.73De	D40	—	11.6	70	25
8	A	Providence Gas	8	.56	7.0	.63De	6	15	12.7	89	60
3	A	Rio Grande Valley Gas	2½	.15	6.0	.28De	7	9	9.0	54	58
5	O	So. Atlantic Gas	11	.80	7.3	1.05De	17	2	10.5	76	36
11	O	So. Jersey Gas	24	1.50	6.3	2.09Au	—	28	11.5	72	55
26	S	United Gas Impr.	35	2.00	5.7	2.48Je	3	1	14.1	81	64
48	S	Wash. Gas Light	32	2.00	6.3	2.46Se	D29	4	13.0	81	43
8	O	Wash. Nat. Gas	13	(1)	—	.38Je	D3	X	—	—	41
7	O	Western Ky. Gas	11	.60	5.5	.72Je	D37	20	15.3	83	38
		Averages			6.3%				12.1	74%	

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER STOCKS

Annual Rev. (Mill.)			11/13/57 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1951-56	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
		Communications Companies									
		Bell System									
$5,825	S	Amer. T. & T. (Cons.)	164	$9.00	5.5%	$13.00Au*	D3%	2%	12.6	70%	66%
274	A	Bell Tel. of Canada	41	2.00	4.9	2.25De	D3	2	18.2	89	64
43	O	Cin. & Sub. Bell Tel.	77	4.50	5.8	5.58De	2	4	13.8	81	100
209	A	Mountain Sts. T. & T.	110	6.60	6.0	9.36Au	7	13	11.8	71	73
308	A	New England T. & T.	125	8.00	6.4	8.30Se	D9	4	15.1	96	64
792	S	Pacific T. & T.	115	7.00	6.1	9.16Au	D1	4	12.6	76	64
98	O	So. New Eng. Tel.	31	2.00	6.5	2.19De	13	3	14.2	91	69
		Averages			5.9%				14.0	82%	
		Independents									
5	O	Anglo-Canadian Tel.	29	$ .60	2.1%	$3.25Se	6%	54%	8.9	18%	44%
37	O	British Col. Tel.	39	2.00	5.1	2.59Se	D22	12	14.3	77	38
3	O	Calif. Inter. Tel.	11	.70	6.4	1.08Se	24	—	10.2	65	24
15	O	Calif. Water & Tel.	18	1.20	6.7	1.54Jy	NC	10	11.7	78	42
16	O	Central Telephone	18	1.00(m)	5.6	1.94My	NC	16	9.3	52	29
4	O	Commonwealth Tel.	14	.80	5.7	1.48Je	NC	—	9.5	54	38
4	O	Florida Telephone	20	.90	4.5	1.11My	NC	D	18.0	81	42
237	S	General Telephone	39	2.00	5.1	3.11Se	NC	32	12.5	64	35
16	O	Hawaiian Telephone	17	1.00	5.9	1.28Oc*	D9	19	13.3	78	42
6	O	Inter-Mountain Tel.	14	.80	5.7	.80De	D16	2	17.5	100	62

Annual Rev. (Mill.)		(Continued)	11/13/57 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1951-56	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
21	O	Rochester Tel.	17	1.00	5.6	1.40Je	D2	6	13.0	71	39
3	O	Southeastern Tel.	16	.90	5.6	1.44Ma	4	13	11.1	63	42
9	O	Southwestern St. Tel.	19	1.20	6.3	1.67Je	12	4	11.4	67	40
10	O	Tel. Service of Ohio	90	1.20	1.3	6.73Je	10	NA	13.4	18	NA
31	O	United Utilities	20	1.20	6.0	1.63De	D5	5	12.3	74	36
13	O	West Coast Tel.	16	1.00	6.3	1.53Se	23	18	10.5	65	41
252	S	Western Union Tel.	15	1.20	8.0	2.21De	5	15	7.1	54	86
		Averages			5.4%				12.0	63%	
		Transit Companies									
19	O	Baltimore Transit	9	$ .50	5.6%	$ .18De	D86%	X	—	278%	28%
13	O	Cincinnati Transit	4	.30	7.5	.48De	41	10%	8.3	63	46
8	O	Dallas Transit	5	.35	7.0	.90De	58	0	5.6	39	54
33	S	Fifth Ave. Coach	21	2.50	11.9	3.47De	21	4	6.1	73	63
244	S	Greyhound Corp.	14½	1.00	6.9	1.27De	8	—	11.4	79	52
23	O	Los Angeles Trans.	17	1.40	8.2	1.23De	30	11	13.8	114	92
26	S	Nat. City Lines	22	2.00	9.0	2.45De	D10	11	9.0	82	94
13	O	Niagara Frontier Trans.	8	.60	7.5	.28De	D81	—	—	214	82
69	O	Philadelphia Trans.	6	.60	10.0	1.67De	31	8	3.6	36	38
21	A	Pittsburgh Rys.	5	.50	10.0	.57Je	42	3	8.8	88	90
6	O	Rochester Transit	4½	.40	8.9	.68De	58	18	6.6	59	41
23	O	St. Louis P. S.	9	1.40	15.6	.69De	1	19	13.0	203	97
15	S	Twin City R. T.	13	1.80	14.0	1.21De	1	D	10.7	149	48
22	O	United Transit	5	.60	12.0	.88De	D15	21	5.7	68	48
		Averages			9.6%				8.6	97%	
		Water Companies									
		Holding Companies									
40	S	American Water Works	9½	$ .60	6.3%	$ .95Je	D10%	6%	10.9	63%	17%
		Operating Companies									
5	O	Bridgeport Hydraulic	29	$1.70(r)	5.8%	$2.10De	2%	4%	13.8	81%	58%
13	O	Calif. Water Service	39	2.40	6.2	3.48Se	23	3	11.2	69	32
4	O	Elizabethtown Water	38	1.60	4.2	3.28De	16	31	11.6	49	56
9	S	Hackensack Water	38	2.00	5.3	2.87De	D20	2	13.2	70	37
8	O	Indianapolis Water	18	1.00	5.6	1.42De	D12	17	12.7	70	34
5	O	Jamaica Water	31	2.00	6.5	2.88Se#	—	8	10.8	69	25
4	O	New Haven Water	50	3.40	6.8	2.34Je	NC	—	21.4	145	58
2	O	Ohio Water Service	24	1.50(t)	6.3	2.33Je	D13	7	10.3	64	36
8	O	Phila. & Sub. Water	34	.50(e)	1.5	3.25Je	38	3	10.5	15	28
2	O	Plainfield Union Water	56	3.00	5.4	5.04De	D6	5	11.1	60	39
4	O	San Jose Water	40	2.80(r)	7.0	3.80Se	8	9	10.5	74	45
10	O	Scranton-Springbrook	16	.90	5.6	1.51Je	14	8	10.6	60	29
5	O	South. Calif. Water	14	.80	5.7	1.19Je	14	8	11.8	67	34
4	O	W. Va. Water Service	17	.68(p)	4.0	1.83Se	D1	—	9.3	33	17
		Averages			5.4%				12.1	66%	

A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Ju—July; Au—August; Se—September; Oc—October; N—November; De—December. (e)—Also paid 5 per cent stock dividend December 1, 1957. (i)—Paid 2 per cent stock dividend December 10, 1957. (j)—Paid 10 per cent stock dividend November 21, 1956. (k)—Paid 3 per cent stock dividend December 19, 1956. (l)—Paid 4 per cent in stock May 3, 1957. (m)—Paid 10 per cent stock dividend January 2, 1957. (o)—Forty per cent stock dividend paid June 14, 1957. (p)—Also 1 per cent stock dividend quarterly. (q)—Paid 10 cents in January, 1957. (r)—Includes extras. (s)—Estimate for December 31, 1957. (t)—Also paid 2 per cent stock dividend September 30, 1957. (u)—Also will pay 10 per cent stock dividend December 30, 1957. (v)—Also will pay 2 per cent stock dividend December 30, 1957. NC—Not comparable. NA—Not available. D—Deficit 1951. *On average shares. **1951 was an abnormally bad year. #—Adjusted to eliminate 24 cents per share of nonrecurring tax savings.

What the State Commissioners Are Thinking About

Excerpts and digests from the opinions expressed in reports and addresses at the annual convention of the National Association of Railroad and Utilities Commissioners in Memphis, Tennessee, from October 28 to 31, 1957.

On Regulatory Commissions

"THE regulatory commission is one of the most important offices in the state of Tennessee and I am sure this holds true for the other 47 states. It touches the lives and pocketbooks of every man, woman, and child, yet about the only time we are ever heard of is when we make an unpopular decision or become engaged in an internal squabble—then we really make the headlines, but we seldom do either. Contrary to the view held by many people a commissioner need not be a technical expert on any phase of regulation. I am constrained to believe that he will make a better commissioner if he does not qualify as such. . . . I am also concerned over an idea which is still quite prevalent in some quarters; that is, that a regulatory commission is that of referee between the people on one hand and the utilities on the other. . . . I am sure we do not have any of them any more but no doubt you have heard of commissioners who professed great affection for the dear people while at the same time professing deep resentment and hate for the utilities which they regulate. I am sure it is quite clear to all of us gathered here that the utilities which we regulate are part of the public. They have assumed the rôle of citizenship, are heavy taxpayers, and are entitled to fair and just treatment. It is not always an easy matter to determine just when a fair rate of return ends and confiscation begins. Certainly we do not wish to be understood as advocating that the utilities are always entitled to anything they request at the hands of the commission. I have said many times, both personally and officially and from the bench, that when properly understood and evaluated the interests of the utilities and the general public are not in serious conflict."

—JOHN C. HAMMER,
Retiring president, National Association of Railroad and Utilities Commissioners.

On Public Utility Rate Trends

"WE find that new inflation is causing and will continue to cause a new series of rate increases. At the end of 1956 application for electric rate increases amounted to $35.1 million, over three times the amount pending at the end of 1955. Applications for retail gas rate increases of $42.2 million were pending at the end of 1956 which was $17 million more than were pending at the end of 1955. At the end of 1956 approximately $136.7 million of telephone rate increases were pending. . . .

"Renewed inflation and the increased cost of money revive the necessity of adopting a forward-looking view in the fixing of utility rates. . . . Regulatory methods have of necessity been 'backward looking' rather than anticipatory or forward looking in technique. This is easily understandable since the necessity for firm justification of the rates requires firm basic data. However, your committee feels that in view of the above recent economic changes, 'backward-looking' methods must, to the extent possible, be co-ordinated with principles founded upon anticipatory views.

"As previously brought out, the renewed impact of inflation on operating costs, coupled with the increased cost of new capital, will most certainly exert a double pressure for upward revision of utility rates. This is especially true in the case of a utility that is faced with the problem of major plant expansion to meet increasing service demands.

"Lacking any offset, earnings adequate today under today's level of utility rates will inevitably become inadequate tomorrow. Moreover, this appears to be a continuing problem throughout the coming years.

"There are, however, a number of factors which hold forth some promise of at least mitigating this upward pressure on utility rate levels over the long pull. Success in this respect hinges on the manner in which utility operations are conducted. Fundamentally, it is a question as to whether a utility management functions with the long-term view in mind, or must tailor the pattern to accomplish short-term results.

"For example, if utility plant is constructed on a wholesale and stabilized basis, with the ultimate usage as the determining factor, utility service can be produced over the life of such plant at a cost lower than would be required if the plant were constructed on a piecemeal, start-stop basis.

"However, such a program, which has favorable long-range cost implications for the utility customer, involves the utility itself in higher initial capital commitment, together with its depressing effect on current earnings, and the assumption of a longer-term risk.

"In the utility operating field there are similar possibilities. Expanded research and long-range employee training may well produce increased efficiencies in the future years, even though expenditure for such purposes today results only in reducing current earnings.

"With some margin in current earnings, utility management can safely adopt these programs which operate for the long pull—the programs which promise in the long run to provide some offset to the continuing upward pressure on utility rates. However, if a utility management considers that earnings are already at an inadequate level, it will be apt to adopt only the short-term programs which minimize or eliminate risk and the immediate impact on earnings.

"Recognition of this particular function performed by adequate earnings is somewhat new to the field of regulated utilities. In unregulated industry it has long been apparent that the management of those companies whose earnings have afforded them the opportunity to operate for the long pull are producing, on a quality-price balance, the goods that the consumer prefers. It may be that commission consideration of those factors should enter into utility rate fixing."

—Report of the Committee on Rates of Public Utilities, Paul E. Weiland of Ohio, chairman.

On the High Cost of Money

"THE outstanding development in the field of corporate finance since the submission of the committee's 1956 report has been the accelerated increase in the cost

of money. Recent cost levels, particularly with respect to interest rates, have been higher than any since the early 1930's. For example, the average yield on Moody's Aaa public utility bonds rose from 3.17 per cent in December, 1955, to 3.89 per cent in June, 1957. Also, the rise in interest rates over the said 18-month period has been sharper than in any comparable period since before the turn of the century. Two of the immediate causes of the increases in interest rates are (1) the high demand for new money for expansion by industry and (2) the anti-inflation policy of the Federal Reserve Board.

"During 1956, the demand for new capital continued unabated. In that year corporate financing set a new record at $10.9 billion—a 7 per cent increase over the previous high record attained in 1955. Over-all financing plans for 1957 continue at record levels. Preliminary figures for the first half of 1957 indicate that corporate issues aggregated $6.5 billion, or about one-third more than the $5 billion offered during the corresponding period in 1956.

"The pressure for new capital reflects the tremendous demand for funds to finance plant and equipment outlays. In 1956, expenditures for new plant and equipment reached a record high of $35.1 billion. Latest available estimates by the Securities and Exchange Commission and Department of Commerce indicate that expenditures during the first nine months of 1957 will be about 9 per cent above the corresponding period of the previous year.

"In addition to business expansion, mounting government expenditures plus record level consumer spending created pressures on the capital market. These pressures for funds, coupled with the Federal Reserve Board's policy of controlling the expansion of credit within the limits of growth in resources to break inflationary tendencies, made the rise in interest rates inevitable. The 'prime' short-term interest rate is now at 4 per cent—the highest it has been since 1933. Accompanying the rise in the nominal rate paid for short-term loans, the actual costs of such funds have increased even more through the banks' requirements for borrowers to maintain larger bank balances and the downgrading of borrowers into lower-quality classes.

"In trying to evaluate the impact of tight money on corporate financing, published yield averages commonly used understate substantially what has actually happened in connection with interest rates. Since these yield averages are based on seasoned issues, and because of the wide spread in recent months between new and seasoned issues, the true situation is only reflected in the market for new issues. Moody's yields on newly issued corporate bonds show that the average yield on new Aaa corporate bonds rose from 3.15 per cent in January, 1956, to 4.77 per cent in June, 1957—a 51 per cent increase. During the same period, the yield on new A issues increased 67 per cent—from 3.26 per cent to 5.44 per cent. . . .

"In addition to the current high interest rates, utility borrowers have also had to make other concessions in order to keep the cost of new issues as low (relatively) as possible. Companies have sweetened the terms of offerings by making the bonds non-callable for refunding for a specified period of time—usually five years—and by fixing the initial call price at par plus, at least one year's interest. Statistical financing records indicate that bonds with these features have been well received in the market. Limiting the call privilege and increasing the call premiums does, however, create a problem for management. The question that has to be decided is whether to obtain the immediate dollar savings in interest costs which might result from such features or to be able to control future financing by being able to refund when and if interest rates decline.

"The increased cost of debt may result in less pressure on public utilities to solve their earnings problems by unduly increasing the debt in their capital structures. As this committee's report stated in 1955 and reiterated in 1956: 'An increase in debt ratio carries with it the hazards of deterioration of the quality of securities and refunding problems.'

"Not only have interest costs on debt obligations increased, but costs of preferred stock have increased as well. Transcontinental Gas Pipe Line issued $10 million of preferred stock in April, 1957, at a net cost to the company of 6.17 per cent. In June, 1957, Texas Eastern Transmission had to pay 5.95 per cent for a $20 million issue.

"The rapid rises in the cost of debt and of preferred stock capital have brought in sharper focus the inadequacy of earnings-price and dividend-price ratios as measures of the cost of common stock equity. In many instances such ratios are lower than the yield on high-grade bonds. Certainly it is unreasonable to believe that junior equity capital, bearing the risks of business, is cheaper than the capital represented by senior obligations. This matter was considered at some length at the San Francisco convention during a panel discussion on the cost of capital as related to rate of return. At that time it was pointed out that low earnings-price and dividend-price ratios are meaningless as a measure of investor expectations. It was also brought out during the same discussion that one commission had practically rejected the earnings-price ratios and instead had considered such factors as general interest conditions, earnings enjoyed by other companies somewhat comparable to the one under review, attraction of capital, and the return earned on the common stock equity.

"While the increase in the cost of debt and preferred stock equity money in the past is comparatively easy to measure and has been considered by many commissions in arriving at a fair rate of return, the difficulties of measuring the cost of common stock equity raises the question as to whether or not the use of this method as a measure in determining fair rate of return should be reconsidered. It has been suggested that it might be more desirable to place less reliance on the so-called 'cost of money' for common stock equity and more on such factors as earnings of unregulated industries with comparable risks and the expansion needs of the utility in determining a fair rate of return."

—Report of the Committee on Corporate Finance, Francis T. Mylott of New York, chairman.

On Service and Facilities

". . . it is very apparent that all four of the utility industries in varying degrees have in recent years made tremendous strides in the expansion of their services and facilities with what this committee thinks is justifiable pride. However, with all this, there still remains much to be accomplished because many commissions still receive too many complaints and these utility industries must ever strive for perfection in this regard. Thus, this committee is of the opinion that utility management must guard against complacency and minimize valid complaints wherever possible. It is to be noted that the gas utilities have yet to find a safe and economically feasible way in which to serve trailer courts. Also, it seems that the telephone industry continues to have many valid complaints which this committee thinks could be eliminated.

"This committee notes that the improvement in safety programs is most creditable and it is hoped that this improvement will continue to advance as rapidly in the future as it has of recent years."

—Report of the Committee on Service and Facilities and Safety of Operation of Public Utilities, Richard J. Luman of Wyoming, chairman.

On the Separations Manual

"THE principal accomplishment of your committee during the past year has been the rewriting of the Separations Manual. Following the directive of the 1956 convention the staff committee has drafted a revised manual which incorporates all the changes since its last revision, and embodies such other changes required to reflect the latest operating conditions and regulatory requirements. . . .

"Representatives of the United States Independent Telephone Association and the Bell system took an active part in the meetings and technical discussions of the task force. While these industry representatives had no vote in the decisions regarding the actual content of the manual, they did render invaluable assistance in making the detailed studies necessarily required by an understanding of this nature. The result of this

close co-operation between industry and regulatory personnel is that your manual now contains specific procedures which can be applied to both the independent industry and the Bell system. . . .

"As pointed out in the staff committee report, there still exist certain areas which require further study and consideration. One such area is the application of the actual use principle of separations in instances where substantial seasonal factors are present. Your committee recommends that the needed additional studies be undertaken and further consideration be given to clarifying the manual in this respect. As recommended by the staff committee, your committee believes it is also desirable to study the feasibility and desirability of including in the manual methods of developing allocation factors and to consider other basic separations procedures."

—Report of the Special Committee Cooperating with the Federal Communications Commission in Studies of Telephone Regulatory Problems, Matt L. McWhorter of Georgia, chairman.

On Accounting Revision

"THE committee has . . . completed its work on the water and gas systems of accounts. Under date of May 8, 1957, a report was made to the executive committee outlining the need for the changes which were incorporated in the revised gas and water systems and comparing the accounts in the revised systems with those presently effective.

"It was pointed out that the present NARUC water system of accounts is rather obsolete and needs a number of technical improvements and also a number of changes in order to permit better co-ordination with the electric and gas systems. Further, there are no NARUC class C or class D water systems of accounts and there are thousands of small water utilities that need a properly designed accounting system for their operations. American Waterworks Association, which has participated in the formulation of the revised water systems through an appropriate committee, is quite desirous that the revised water accounting system be recommended by the NARUC.

"The present NARUC gas system was issued in 1937. At that time the principal source of supply was manufactured gas, chiefly by coal gas or water gas processes and substantial portions of the 1937 NARUC System of Accounts dealt with manufactured gas operations. Today, there are very few such operations in the United States.

"The growth in natural gas operations has made the 1937 gas system of accounts obsolete in a number of respects. For example, the system has no accounts for underground storage operations. The Federal Power Commission, which originally adopted the NARUC system, has had to amend it a number of times. The result is that the present NARUC system is not suitable for the purposes of the industry nor for commission accounting purposes and does not permit co-ordination with the present FPC system.

"In the event the revised gas system is recommended by the association, we have been informed by the staff of FPC that, to the minor extent the revised gas system differs from the present FPC system, the staff will recommend that the FPC accept such revisions and, accordingly, there will be complete uniformity between the gas system of accounts recommended by NARUC and that issued by FPC."

—Report of the Committee on Accounts and Statistics, Asel R. Colbert of Wisconsin, chairman.

On Accelerated Depreciation

"A SURVEY was made to ascertain the method the various commissions have prescribed for the recording of deferred federal income taxes in connection with liberalized depreciation under the provisions of § 167 of the Internal Revenue Code of 1954. Those reporting fall into four classifications.

"One, those who treat the deferred income taxes as a tax saving and require the utilities to report only those taxes which are payable currently as an expense. The second group are those where the commission prescribes recording the accumulation in restricted surplus. The third group, which appears to be by far the largest, prescribes that the tax deferral accumulated should be recorded in a special reserve. The fourth group has established no policy in connection with the treatment of deferred income taxes.

"This is due to the fact that, in most instances, no utilities in these states have taken advantage of the liberalized depreciation program.

"In some instances the commissions have not established a definite policy but indicated how they treated accelerated depreciation and income tax deferral therefrom in recent rate cases which we have taken to reflect commission policy."

Tax Saving and Expenses Reduced	
Connecticut	Pennsylvania
New Hampshire	Tennessee
North Carolina	Delaware
Tax Deferred Credited to Restricted Surplus	
Colorado	New Mexico
Florida	North Dakota
Indiana	Virginia
Iowa	Wyoming
New Jersey	Maryland
Tax Deferred Credited to a Special Reserve	
Arkansas	Missouri
Georgia	Nebraska
Idaho	Nevada
Illinois	New Jersey
Kansas	New Mexico
Louisiana	North Dakota
Massachusetts	Ohio
Michigan	South Carolina
No Policy on Deferred Taxes	
Arizona	South Dakota
Mississippi	Utah
New York	Washington
Oregon	Vermont

—Report of the Committee on Valuation, Alan S. Boyd of Florida, chairman.

On Salvage and Cost of Removal

"CHANGING price levels and particularly the erratic movement of the price of nonferrous metals and persistent upward movement of wage rates have had a pronounced effect on cost of removal and salvage as percentages of book cost of plant retired.

"These trends are perhaps most significant in connection with pole lines where the cost of removing and disposing of poles is substantial, with gas mains where the removal is often required by local ordinance even though the pipe may have no salvage value, and with cable and copper wire for which a large part of the plant cost is represented by recoverable metals; that is, copper and lead.

"Before the war, in spite of the upward trend in wage levels, removal costs in per cent of average original cost of plant retired, were reasonably steady. Since the war, however, removal costs in general began to rise due perhaps to wage levels which have continued to go up. Yet the percentage relation between cost of removal and original cost of plant retired does not appear to have followed the wage trend, but has fluctuated considerably. This suggests that cost of removal in actual dollar amounts and in per cent of the cost of plant retired must depend not solely on wages, but on such other factors as the performance or efficiency of labor, labor-saving devices used, size of the job, season of the year in which job was done, etc.

"The salvage on cable and wire has been at a high level ever since the war, but it has fluctuated both up and down. This is not surprising in view of the high and unstable prices of copper and lead during the last ten years.

"One of the fundamental problems in regard to the determination of net salvage percentages to be used for the development of depreciation rates is the difficulty of estimating future gross salvage and future cost of removal. Whether we consider the forecasting of the future level of copper prices which have fluctuated so widely in the past, or the cost of removal which has also fluctuated but has shown an upward trend, such forecasts become very difficult to make. Particularly is it difficult when it is recognized that some of the present plant for

which a depreciation rate is to be developed may not be removed for fifty years.

"One way of overcoming this difficulty would be to consider salvage as income, when realized, and cost of removal as expense, when incurred, thus eliminating them as factors underlying depreciation rates. This contrasts with the concept presently governing the accounting of many utilities that depreciation expense should reflect the amortization of original cost less net salvage over the life of the property."

—*Report of Committee on Depreciation, P. M. Schuchart of Florida, chairman.*

On Atomic Energy Regulation

"THE new problems attendant on the advent of nuclear power have so many ramifications that many state agencies will be affected; therefore, if a workable program is to be attained very close co-operation by the affected agencies will be necessary. Many agencies in all our states are presently or will in the future be interested in varying aspects of nuclear energy development. . . .

"As the problems develop, there will probably be still other state agencies involved. It appears obvious that with so many agencies having some interest in a common subject, effective co-ordination will be essential. Without some method of co-ordinating the activities of the various agencies, particularly those concerning protective measures against radiation hazards, regulations in conflict with one another might be promulgated and much confusion could result.

"It is also our understanding that the Atomic Energy Commission may, under the powers of the 1954 act and with the consent of the states, employ the services of the states to enforce and carry out its regulations covering certain matters within the area of its jurisdiction, providing the state is organized so as to enable the Atomic Energy Commission to deal with one centralized or co-ordinated state agency.

"The Atomic Energy Commission is also interested in training a reasonable number of key state employees in some fields of inspection work; but again, the representatives of the AEC, appearing at a recent meeting called by the Council of State Governments, indicated that it would be advisable to work through one central office in each of the various states.

"It would thus seem that the best method of initiating a co-ordinated program would be the creation of a department to co-ordinate all matters relating to nuclear energy. However, since in most states we already have numerous boards, commissions, or bureaus, and money to operate the present agencies is not too plentiful, it would appear that the head of one of the existing agencies could be designated as Co-ordinator for Nuclear Energy by executive order, making the person so designated responsible to the governor and requiring the other agencies to co-operate to the fullest extent with the co-ordinator. The co-ordinator would have the duty of co-ordinating the studies, recommendations, regulations, and proposals of the several agencies of the state with each other. And, so far as may be practicable, he should co-ordinate the studies conducted, and the recommendations and proposals made in his state, with like activities in other states, and with the policies and regulations of the AEC.

"This method of achieving the essential co-ordination could serve only as the starting point for the program, since it is to be presumed that the person designated as co-ordinator would already be a busy person who could carry the additional duties only during the initial stages of nuclear power development. Each state, as nuclear power plants are erected, or sources of nuclear fuels developed, or transportation or radioactive materials become substantial within its boundaries, is likely to require the services of a full-time co-ordinator with an adequate staff of experts. The alternative to effective co-ordination might well be chaos which would seriously retard development in this important field.

"Compatibility between the policies and regulations of neighboring states is also highly desirable. Inadequate safeguards, leading to pollution of air or water in one state could jeopardize the welfare of the residents of adjoining states. Competition

between the states to attract atomic plants might lead to laxity in rules essential for the protection of the public; or, on the other hand, the adoption by some states of a policy of discouragement of development within their borders, to let other states bear the costs and hazards of the experimental period, could delay the coming of the atomic age and have an adverse effect on the national economy.

"Interstate co-operation, where there is a conflict of state interests, has never been easy to achieve. Any attempt to set up legal machinery to compel it would meet with understandable opposition from the states determined to preserve their autonomy and sovereignty. But competitive rivalry between the states in connection with the development of nuclear power might well have such unfortunate consequences as to justify the federal government, if such consequences began to manifest themselves, in pre-empting authority over the entire field. If nuclear power is to be the dominant factor in our future economy, such preemption would have far-reaching consequences; consequences highly distasteful to those who, like most members of this association, believe that the authority of the states should be maintained.

"There is a simple solution to the problem here presented, if it can be achieved. If the regulatory commissions and other agencies of the several states, each acting independently, arrive at policies and rules that are in harmony with those of the other states, the necessary compatability can be attained with no encroachment on state autonomy. Your committee believes that the association should set as one of its primary goals the achievement of harmony between the states by voluntary and independent, but consistent, action by its member commissions. It is the hope of your committee that it may, as the problems unfold, and with the co-operation of the commissions that are experiencing them, make recommendations that will have such merit as to commend themselves for widespread adoption. We know of no more useful service that any association committee could perform.

"In the opinion of your committee, the achievement of the objective of harmony between the states in this field will provide the best assurance of the maintenance of state authority. Until 1954, nuclear developments were, almost of necessity for security reasons, within the exclusive jurisdiction of the federal government. Now that this initial monopoly has been relaxed, the federal government still owns the nuclear fuel, has most of the 'know-how,' and does almost all of the licensing and regulating. It might continue in exclusive possession of the field; but it has evidenced an intention not to do so. That intention may be interpreted as tentative only. If and as the states demonstrate a willingness and capacity to take over and discharge the responsibility it will apparently be relinquished to them. No doubt all state action, at the outset, will have to be consistent with the federal policy, rules, and regulations. As the states develop their own controls, they may properly insist that federal control be progressively eliminated to the extent that the compulsions of national security permit. The future position and vitality of the states in our governmental framework may well depend on their prompt readiness to perform their proper functions in this important field."

—*Report of the Committee on Nuclear Energy in the Electric Industry, Ray E. Untereiner of California, chairman.*

On Licensing of Nuclear Plant Operators

"IN the early stages of nuclear development it is quite normal for us to anticipate continuing changes in the licensing, operating standards, and enforcement techniques. It appears that the federal government, under present policy, must assume the initial responsibility for the development of basic regulations and will continue to enlarge and redefine the scope of such regulations. However, as the peacetime use of nuclear energy develops, more and more of the regulatory responsibility will shift to the several states. . . .

"Many questions come to mind in connection with the problem of state licensing and unfortunately at the moment, not many

answers are available. Development of this phase is new in the regulatory field and must necessarily evolve with the development of the industry. Some of these questions which present themselves are:

"1. Do the various states have the legal authority to license?

"2. What activity, if any, should be licensed at the state level?

"3. For what period of time should the license be issued?

"4. What should be the cost of such license to the licensee?

"5. Should the license be issued for control or for revenue?

"6. Shall the various states concern themselves with the issuance of licenses and operating permits or leave the entire matter to the federal government?

"At present, it would appear that since the AEC has provided so adequately for licensing, that duplication by the states would be unwarranted. However, in the meantime, the state regulatory agencies will do well to maintain a position a few jumps ahead of the problems as they unfold with the actual development of the peacetime use of the atom. Special attention should be directed to the activities now licensed by the federal government and thought should be given to the feasibility of registration with the states of these federal licenses. The information to be gained would be useful to various state departments and political subdivisions and would provide them, at minimum cost, with a full disclosure of all atomic energy operations within their jurisdiction. Registration of federal licenses would also be more economical for the operators than a separate state licensing procedure. This procedure would have the advantage of continually keeping the various states appraised of the changes in developments in the field and would better enable the states to accept the licensing responsibility that will inevitably be theirs."

—RALPH A. WINTER,
Member, Ohio Public Utilities Commission.

On Airline Regulation

"ONE of the major problems facing the [Civil Aeronautics] Board today is the orderly transition of the air transportation industry from the piston engine to the jet age. In considerably less than two years, jet transportation will be a commercial reality. In a couple of years these fantastic craft will span the continent on regular schedules in less than five hours, compared with today's eight and a half—they will span the ocean, New York to London, in less than six hours, compared with today's 11-hour trip.

"Certainly all of this is new, certainly it is remarkable. The impact on the industry will be tremendous: tremendous in terms of the industry's need for new capital; tremendous in terms of its impact on our present piston-engine route system; tremendous in terms of its impact on the airport terminal; indeed on the habits of the American people.

"However unique this technological advance may be, it is basically no different from the advance of the communication industry from radio into TV. It is no different from the advance of the power industry to atomic energy. Relatively, the basic problem is little different from a local transit company's change from streetcars to buses. . . .

"Nowhere are our common interests, our common problems, and some of the significant trends in current aviation regulation better focused than in the local service area proceedings now pending before the board. . . .

"One of the most interesting aspects of the local service picture has been the marked increase in the awareness of city and area civic groups in the forum that these proceedings give them to make their cases for improved air service. Civil intervention has always been recognized by the board as a vital parts of its fact-finding process."

—JAMES R. DURFEE,
Chairman, Civil Aeronautics Board.

The March of Events

BPA Keeps Power Rate

BONNEVILLE POWER ADMINISTRATION'S historic $17.50 per kilowatt-year wholesale rate is good for at least two more years. Extension of the rate on which BPA started delivery of the first power from Bonneville dam to December 20, 1959, was announced last month by Administrator William A. Pearl following approval by Secretary of Interior Fred Seaton.

Pearl said a review of power revenues and a forecast of amounts needed to repay federal investment in the dams in the federal system indicate the basic rate can be retained until the end of 1959 despite higher costs of new generation being added.

The wholesale rate applies to 114 customers, including 18 industries, 76 publicly owned utilities, 9 privately owned utilities, and 11 federal agencies.

California

PG&E Files Second Amendment

A SECOND amendment to an existing application for increased gas rates was filed with the state public utilities commission last month by Pacific Gas and Electric Company.

The amendment has three principal features: First, as a result of the commission's September 24th interim decision, increases in rates have been proposed for all classes of customers instead of only for interruptibles (industrials) as PG&E originally had proposed. Second, it asks for an increase to 6.8 per cent in the company's authorized rate of return from gas operations. Third, it aims at simplifying PG&E rate schedules. The company pointed out that the greatly increased prices it must pay for gas, labor, materials, and equipment necessitate the increased revenue it is requesting.

PG&E filed the application originally December 17, 1956, to restore the declining rate of return caused by the increased costs of doing business.

Kansas

Gas Rate Boost Approved

A RATE increase of $1.1 million annually for the Gas Service Company was authorized recently by the state corporation commission, effective on November 12th.

The increase will amount to an average of 33½ cents a month on bills of domestic consumers. It provides for an increase in the minimum rate on the first thousand cubic feet of gas to domestic consumers from $1 to $1.25, and an additional one cent on each additional thousand cubic feet.

The rate boost affects more than 280,000 customers in 150 Kansas communities, including Kansas City, Kansas, Northeast Johnson county, Topeka, Hutchinson, and Wichita.

Missouri

Court Declines to Rule on King-Thompson Act

THE state supreme court last month declined to pass on the constitutionality of the state's King-Thompson public utility no-strike law, in a case involving a municipally owned public utility in Springfield.

It said the law was not applicable to such a utility.

The court held the state board of mediation, which administers the no-strike law, had no jurisdiction in municipalities in which there "is no separation of municipally owned public utilities" from other city functions, so labor relations "could be handled on a basis similar to private industry."

Springfield owns a municipal electrical plant and a bus system, and has an appointive board of public utilities. The charter provides for a council-manager government and vests all powers of the city in an elective council.

Judge Laurance M. Hyde, who wrote the opinion, held that under the special charter of Springfield "the whole matter of qualifications, tenure, compensation, and working conditions in the city's public utilities involves the use of the city's legislative powers, so these matters cannot become a matter of bargaining and contract."

Nebraska

Power "Rules" Made

THE Ground Rules Power Committee, composed of representatives from Nebraska Public Power System, Consumers Public Power District, rural electric companies, and three municipalities, recently drew up a list of five recommendations to be considered by the board of directors of the power groups represented.

Ray J. Lowrey of Oak, committee chairman, said: "There is no doubt in my mind that these recommendations will iron out power problems in Nebraska." The recommendations are as follows:

1. That no duplicating transmission lines be built where service is adequate.

2. Normally new customers should be served by the agency that can do the job most economically except under extenuating circumstances.

3. If such agreement cannot be formulated by the parties concerned, it will be referred to an arbitration committee consisting of one representative from each group concerned and a third party agreeable to the groups involved.

4. There should be no cutting customers back and forth from one district to another due to dissatisfaction, grievances, etc. Specifically, this means power shortages, arguments about bills, or credit.

5. The purpose of the ground rules is to give the customers better service and not penalize them.

New York

Withdraws from FPC Hearings

THE city of Niagara Falls last month voted to withdraw from the Federal Power Commission hearings on the controversial Niagara power project.

The 3-to-2 vote for withdrawal at a city council meeting in effect told the New York State Power Authority to go ahead with its plans for construction of the giant multimillion-dollar project.

Washington

PUD to Build Project

THE Douglas County Public Utilities District will "go ahead as previously planned" with work on the proposed Wells dam, William T. Nordeen, PUD manager, said recently. The future of the dam was recently reported as being in doubt because of Kaiser Aluminum & Chemical Corporation's decision to withdraw as a partner in the development. Kaiser officials had indicated they felt the project was feasible for use by utilities, but would have too high a power cost for aluminum production.

In another development, the Douglas PUD allowed time to run out on its legal action against the Chelan PUD over encroachment on Wells dam. This means the lawsuit seeking 45,000 kilowatts for Douglas PUD because of encroachment on the proposed Wells dam from the Rocky Reach pool has been dropped. The two PUD's now have an agreement whereby Douglas PUD has an option to buy 6¾ per cent of the Rocky Reach power at cost.

Bus Line Asks Boost

FIVE-CENT increases in both adult and student fares were requested by Spokane City Lines last month in a petition to the state public service commission. The city of Spokane immediately served notice it "will unalterably oppose any raise in bus fares here." The company asked that the new schedule go into effect December 13th, but the commission chairman said the increase would be suspended pending a hearing.

The requested increases were for a 20-cent cash fare or three tokens for 50 cents for adults and 15 cents cash or two tokens for 25 cents for students. Present adult fare is 15 cents and for students it is 10 cents or five tokens for 30 cents. Only the present 10-cent cash fare for children under twelve would be unchanged.

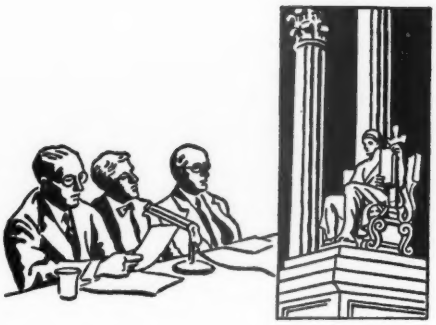
A company spokesman said: "Our cost problem is such that we either have to cut service or increase fares. We feel that the public would rather support a fare increase."

West Virginia

Gas Company Raises Rates

CUSTOMERS of the Manufacturers Light & Heat Company in the northern panhandle area are paying 14 per cent more for their gas, it was reported recently.

The company placed a $1,315,000 rate increase into effect pending a decision by the state public service commission on its application for higher rates. If the commission refuses to allow the increase, or permits a lower one, customers will be given refunds. Further hearings on the rate increase will not be held until January.



Progress of Regulation

Trends and Topics

Selection of Route for Electric Line

THE right of the federal government or a state to take the property of an individual for a public use is well established in law. This sovereign authority may also be delegated to public utility companies. Exercise of the power of eminent domain is limited; the use for which property is to be taken must be for the benefit of the general public and compensation must be made. While decisions in condemnation proceedings do not ordinarily come within the scope of commission regulation, in some states commission authority extends, to some degree, to this branch of the law. Some commissions are required by statute to decide what property should be taken, or to determine a proper route for a public utility line. Private interference with the construction of such a line would prevent the carrying out of the public purpose.

Company's Responsibility for Route Selection

Pennsylvania courts have ruled that the selection of a route for transmission lines is a matter for the public utility in the first instance; and unless it is shown that it proposes to exercise the powers conferred upon it wantonly or capriciously, the law does not intend that the commission should withhold its approval merely because another route might have been adopted which would damage the owners less or lessen the inconvenience to them. This rule, stated by the superior court in upholding a commission order authorizing a power company to construct a line (7 PUR3d 173), was quoted with approval by the Pennsylvania supreme court in the recent decision reported in 20 PUR3d 56.

In this case property owners had agreed among themselves not to convey property to the Philadelphia Electric Company and they sought an injunction to prevent one of the property owners from selling land to be used for a transmission line. The route had been selected by the company and there was no showing that it proposed to exercise the power of eminent domain wantonly or capriciously. The court said that under those circumstances the law did not intend that the commission should withhold its approval merely because

another route might have been adopted. The commission's approval had been the subject of litigation in several other cases coming before the Pennsylvania superior court, and in all of them the decision had been reached that the transmission line was necessary for the service of the public (12 PUR3d 477, 15 PUR3d 28, 17 PUR3d 370).

The public need for public utility plant construction has also been held to be superior to the purposes for which local zoning restrictions are imposed. This subject is discussed in PUBLIC UTILITIES FORTNIGHTLY, June 7, 1956, at page 865.

Conduits between Curb and Building Lines

The New Jersey board, several years ago, approved a proposal by the Atlantic City Electric Company to condemn property between curb lines and building lines of a city street instead of installing underground conduits under the pavement. The public interest, said the commission, required that as many overhead wires and poles as possible be removed from the streets and that they be placed underground. The testimony indicated that it would be far more expensive and less practical to install the necessary conduits and manholes between the curb lines; it would be more practical to install them between the curb lines and the building lines underneath the sidewalks (PUR1931C 61).

Review of Current Cases

Net Investment, Cost of Capital, Cost Allocations, and Expenses Considered in Telephone Rate Case

THE Michigan commission granted the Michigan Bell Telephone Company a rate increase of $2,835,000. The new rates were calculated to yield a return of 6.60 per cent upon a net plant investment rate base. The company had requested a rate boost of $12.5 million.

In considering the return requirement, the commission adopted a hypothetical debt ratio of 40 per cent rather than the actual Bell system debt ratio of about 33⅓ per cent as proposed by the company. The company's actual debt ratio was about 21 per cent.

Separations Procedures

In allocating the company's plant, revenues, and expenses between interstate and intrastate business for the purpose of fixing intrastate rates, the commission followed the NARUC Separations Manual, as modified, and based its findings upon average results during the test period.

The commission's staff had suggested that the factors developed during the peak vacation month of August (when toll usage is the highest) would be more appropriate. The latter method would give recognition to the fact that plant is provided to meet peak load demands, not average loads.

Rate Base

The commission found the rate base to be the actual investment in providing intrastate service. This consisted of intra-

state plant in service, less the depreciation reserve, plus plant under construction and property held for future use.

No separate allowance was deemed necessary for working capital or materials and supplies since advance payments for service, and wages, salaries, and taxes accrued but not paid provided funds more than ample for these purposes.

Operating Expenses

The expense allowance for payments made to Western Electric Company for materials, equipment, and services was adjusted to provide Western with the same rate of return as the operating company in order that the ratepayers would not be burdened by excessive profits included in the company's expenses.

The commission disallowed charitable contributions as an operating charge on the theory that they become involuntary donations by the ratepayers for which the ratepayers get no income tax credit. The commission pointed out that on the company's books these contributions were not charged to expenses but were recorded in Account 323, Miscellaneous Income Charges. The commission adopted the company's proposal relating to license contract fees paid to the parent telephone company. Under this proposal it allowed as an operating charge an amount equal to an allocated portion of the parent company's alleged cost of rendering contract services. This amount actually exceeded the license contract fee paid by the operating company. The commission staff had argued that only the license contract fee actually paid, since it did not exceed the allocated cost of rendering the service, should be allowed.

Dissenting Opinion

Commissioner Hunt filed a dissenting opinion which he described as his "last official act" as a member of the commission. He believed, first of all, that the company required a return of at least 7 per cent. Also, he disagreed with the rate base approved by the majority.

He observed that the cost-of-money testimony was based upon total investor funds committed to the operation of the Bell system. Therefore, he said, the proper application of the rate of return requires that all funds committed by investors be permitted to earn the designated rate of return.

He said that a rate base to include all invested capital must include not only net plant but also materials and supplies, working cash, and prepaid accounts. By using net plant alone, the majority adopted a base which he thought to be inconsistent with the rate of return evidence in the case.

Hypothetical Debt Ratio

Commissioner Hunt also disagreed with the majority in its adoption of a 40 per cent debt ratio instead of the 33⅓ per cent debt ratio of the Bell telephone system. He said the commission has no authority to substitute its judgment for that of the company's management in disallowing actual expenses unless the management has committed errors so flagrant as to amount to an abuse of discretion.

In conclusion, the dissenting commissioner said that the best interests of the people demand that the utility companies be kept financially strong; a strong company with good earnings will provide the proper kind of service. He noted that the end result of keeping rates at the lowest possible level will be poorer service at higher cost than would be attained if the company were allowed to achieve good, but fair, earnings. *Re Michigan Bell Teleph. Co. T-252-57.26, August 6, 1957.*

FPC Demand Formula Amendment Remanded

THE United States court of appeals set aside and remanded for additional hearings a Federal Power Commission order allowing a natural gas supplier to amend the demand formula used in billing a retail distributor.

The court of appeals held that the order had been prematurely entered on an incomplete record.

The order had not shown the commission's judgment (and its reasons for reaching it) as to exact legally effective terms and conditions of a contract, if any, between the supplier and the distributor as the same existed immediately prior to the entry of the order. It was also held that the commission did not make findings and reach conclusions on certain other relevant matters. *Portsmouth Gas Co. v. Federal Power Commission, 247 F2d 90.*

Intrastate "Firm Gas" Contracts and Interstate "Dump Gas" Contracts Not Interdependent

THE United States court of appeals held that gas pipeline companies could be engaged in both intrastate and interstate business without bringing the intrastate portion within the jurisdiction of the Federal Power Commission. Gas sold pursuant to "firm gas" contracts for consumption in North Dakota was clearly distinguishable, held the court, from the "dump gas" sold in interstate commerce. Such contracts were not interdependent with dump gas contracts which had been executed between two gas suppliers and a gas-distributing company, the same parties to the firm gas contracts, on the following day.

The fact that the commission had assumed jurisdiction over the dump gas contracts did not justify assumption of jurisdiction over the firm gas contracts. The court could find nothing to substantiate the claim of interdependence of contracts.

The act does not embrace intrastate commerce and the commission has no authority to regulate intrastate sales, pointed out the court. The firm gas had been produced, wholesaled, transported, and sold for immediate consumption solely within the state. It did not become a proper subject for federal regulation as being in interstate commerce merely because, during part of its transportation, it was in a commingled state with gas admittedly transported in interstate commerce. The fact that the contracts for intrastate supply had been executed one day prior to the execution of the interstate contracts for dump gas did not make the transaction a proper subject for federal regulation. *North Dakota v. Federal Power Commission, 247 F2d 173.*

Test-year Sales and Cost-of-service Questions Decided in Gas Pipeline Rate Case

GENERALLY upholding an examiner's decision in a § 4(e) rate proceeding under the Natural Gas Act, the Federal Power Commission fixed rates for Tennessee Gas Transmission Company for the period between December 15, 1954, and July 14, 1957, and prescribed refunds for that period. The two dates were fixed by

the effective dates of proposed rate increases.

The hearing before the examiner was limited to the questions of cost of service to Tennessee and the rate level. There was no controversy as to a 6 per cent rate of return on which the cost of service was based. The year 1954 was agreed as an appropriate test period, and the rate base was not disputed in substance.

Actual Test-year Sales Adopted

Interveners took the position that the company's transmission capacity would be more fully utilized after 1954 than it was during the test year and that actual test-year revenues, accepted by the examiner, should be adjusted to account for prospective higher revenues. They insisted that such additional revenues would result in an excess of $2 million in revenues instead of the deficiency of $4 million claimed by Tennessee. The examiner, rejecting their position, noted that it was not supported by the company's experience in 1955 and further observed that it had not been established that the test-year facilities were adequate to transport the increased volumes suggested.

The practical business of fixing rates, the commission pointed out, must proceed in so far as possible on the basis of actual operating experience of the company. Mere predictions or extrapolations from incomplete data of what future sales might be are not reliable. Adjustments to sales of such far-reaching effect as the interveners contended for, said the commission, would introduce an element of uncertainty and doubt wholly inconsistent with sound, practicable, and effective rate making.

Advertising Expenses Allowed

Advertising expenses were allowed in the amount of approximately $97,000. Other amounts suggested included $500,000 which the directors had authorized to be expended for advertising over a 12-month period beginning in the latter part of 1954. About $297,000, however, was actually expended in the first full calendar year after the inauguration of the advertising program. The examiner disallowed the entire $500,000 including the $97,000. He believed that no facts or data had been presented to establish that the advertising had resulted in any reduced costs of financing or in a lower rate of return for the company. He thought cost of service should not reflect this expense unless test-year revenues were adjusted upward correspondingly to reflect increased sales expected to result from the expense.

A utility is entitled to include in its costs a reasonable amount for advertising purposes, the commission noted, and up to this point the actual expenditure lies in the discretion of management. The criteria relied on by the examiner would make it practically impossible for a company ever to sustain any advertising expenses. Considering the magnitude of the company's operations, the usual advertising expenditures of utilities generally, and the benefits reasonably to be expected from the expense, the commission concluded that the actual expenditure in the test year was reasonable.

Tax Items

Several tax questions were presented respecting whether certain deductions should be reflected in computing the federal income tax component of Tennessee's cost of service. A deduction for depreciation of rights of way, disallowed by the tax authorities, was held to have no place in the income tax component of cost of service. Similarly treated by the commission was an item representing the cost of transporting base gas into storage, held

by the tax authorities as capital and disallowed as a tax expense.

Extraordinary property losses, pension plan excess payments, and losses from fire and storm, while allowable as income tax deductions, were rejected by the commission as expense items either for cost-of-service purposes or for corporate accounting. Such items are not by their nature properly includable as expenses. Although an item is allowed as a deduction for income tax purposes, said the commission, it does not necessarily follow that it must be allowed in the cost of service as an operating expense or in the rate base. A deduction for capitalized taxes, treated as an element in the income tax component of cost of service, was not allowed as a separate operating cost.

Discrimination Issue Raised

Tennessee extracts some of the heavier hydrocarbons from gas from the mainline stream and sells this product to a contract purchaser, crediting the revenues to its gas revenues.

The contract charge is based on a cost-of-service charge for the extracting operations and a charge based on the volume of gas used at the plant. The staff argued that the amount of the credit to the jurisdictional cost of service relating to the volumes used at the plant should be increased on the basis of the Btu content of the product since it has twice the heat units of gas sold to other customers. Otherwise, it was contended, discrimination would exist against such other customers.

The commission rejected this contention, observing that the purpose of the contract was to rid the gas stream of objectionable hydrocarbons which had caused operating difficulties. *Re Tennessee Gas Transmission Co. Docket No. G-5259, October 17, 1957.*

FPC Determination of Tax-accrual Offset against Working Capital Reversed

THE United States court of appeals held that the Federal Power Commission had erred in ignoring an examiner's findings, favorable to a gas company and adverse to the staff's contention, by retrospectively limiting the issues in a hearing ordered to encompass all matters having a reasonable relationship to working capital requirements to the question of tax accruals only. The determination that 65.55 per cent of federal income tax accruals collected by the company monthly from customers was to be offset against working capital requirements was held not supported by the evidence.

The Trunkline Gas Company here involved, because it was owned by its largest customer, had a unique cost-of-service formula tariff, approved by the commission. In contrast to the traditional method of fixing the tariff charged to assure the specified rate of return on invested capital, Trunkline billed its customers monthly for an amount equal to its actual operating expenses for such month. This included the cost of the gas being sold plus one-twelfth of its annual income tax and one-twelfth of the annual return (6 per cent) on its net investment rate base.

Thus the cost-of-service tariff produced a fluctuating rate from month to month and automatically limited the pipeline to the recovery of actual cost, regardless of the volumes of gas it was able to sell. Unlike the traditional operation, it had no means by which to offset unfavorable

against favorable months, or vice versa.

The court, in the instant case, was concerned solely with the determination of the working capital allowance and whether, and to what extent, federal income tax accruals collected by Trunkline monthly were to be taken into account. Trunkline had been permitted to earn a return of 6 per cent on a working capital allowance of $1,462,148. The company was apparently satisfied with this basis even though no allowance was made in working capital for (1) prepayments of certain expenses, insurance premiums, utility deposits, etc., (2) lag between the date of payment of gas purchases and reimbursement for gas sold, and (3) necessary minimum bank balance.

Such satisfaction may have been due, pointed out the court, to the fact that up to the institution of the action involved here, the commission had not required any credit against this working capital representing the amounts of cash on hand from time to time from federal income tax accruals.

When Trunkline refused to follow the commission's "suggestions," the commission applied the 65.55 per cent formula. Such formula was applied without regard to a determination of the differences between a cost-of-service formula rate and one on a traditional rate base, held the court. By an arithmetical average that flies in the face of actual fact, said the court, the commission assumes that the specified "average" funds (65.55 per cent) will be on hand. The credit is allowed only because the funds are "reasonably available." If they are not reasonably available in the amounts fixed by the percentage, then the utility has to supply its own investor funds on which it is entitled to a return. It can only use funds on hand. It cannot use averages.

A "surplus" of tax accruals in one month is not, by a mere process of averaging, available for the "lean" months later on, the court pointed out. The assumption is that operating expenses are relatively constant so the surplus can hardly be used to prepay them. It is available for such short periods that if invested, the return on it would nowhere make up the amounts needed later on. It is no answer to say that in the lean months the utility can get short-term loans. That is precisely what would be needed. And if needed because tax accruals have not been adequate, this establishes that it would be necessary to supply additional working capital.

Consequently, continued the court, when a tax accrual credit is fixed, it must bear a reasonably substantial actual relationship to the funds available for use in meeting current operations. The commission's conclusion that the 65.55 per cent allowance achieved this was held to be without substantial basis and was not in accordance with law. *Trunkline Gas Co. v. Federal Power Commission, 247 F2d 159.*

Commission's Reasons for Increasing Bus Rates Held Adequate

THE United States court of appeals affirmed a judgment upholding an order of the District of Columbia commission which granted a fare increase to a transit company. The case had been before the court on an earlier appeal by the present appellant from a judgment of the district court which affirmed a commission order. This judgment was reversed by the court of appeals and the case re-

manded to the commission because of inadequate statement of reasons for adopting an original cost rate base (11 PUR3d 146).

After remand, a fare increase was granted by the commission superseding that of the order originally appealed from. The court, on the original appeal, did not have the record of the proceedings before the commission. Now, having before it the benefit of the essential parts of the record, an adequate statement of the commission's reasons for its adoption of the original cost base, and the opinion of the district court, the court of appeals held that such record disclosed a rational and adequate basis for the conclusion reached and the reasons given by the commission to support its ruling. *Spiegel v. District of Columbia Pub. Utilities Commission, 247 F2d 84, Affirming (1956) 17 PUR3d 66, 145 F Supp 679.*

Customer Required to Pay Line Construction Cost or Have Service Discontinued

THE Maryland commission dismissed a customer's complaint against an electric company, noting that the company would be justified in withdrawing service if the customer failed to pay the balance due on the contract cost of constructing a 3-phase line to his premises. When the company threatened to discontinue service, the customer complained to the commission that allowances should be made for appliances which he intended to install. The company pointed out that it could not make allowances under its tariff unless the appliances were actually installed and in service. The purpose of the tariff provision is to reduce the line construction charge by the estimated annual revenue to be derived from appliances served by the new line.

The commission held that the customer must pay within a reasonable time the balance due on the cost of the line or risk having his service discontinued. However, he would be entitled to a refund for additional appliances added in the meantime.

A single-phase line had also been constructed to this customer's premises and the amount due on its cost was similarly in dispute. The customer asserted that he intended to install additional appliances to be served by this line. The commission thought he should have a period of six months in which to settle the account. This would give him time to establish himself in his new residence and install needed appliances, with a consequent reduction in the amount due for the cost of the line. *Scholz v. Baltimore Gas & E. Co. Case No. 5538, October 23, 1957.*

Attrition Reflected in Return Allowance

THE California commission increased revenues for a gas company to produce a return of 7.25 per cent on the adopted results for the test year 1957, and which would enable the company to earn a 6.75 per cent rate of return in the immediate future.

No advantage is to be gained for either the ratepayers or the general economy of the state, pointed out the commission, by restricting the company to so low a return as to hamper it in the attraction of capital funds needed to meet extraordinary obligations arising out of the rapid expansion of facilities.

Expansion was necessary in order to

meet the demands for servicing a growing number of customers.

Rates are made for the future, said the commission, and, in its opinion, the increase in rates authorized met the tests of reasonable rate making, although it was not to be understood as holding that regulation guarantees or assures a public utility will earn net revenues.

The commission considered its former finding of 6 per cent as a fair rate of return in a previous case. Analysis of the company's earnings over the past several years disclosed a definite and constant decline in the rate of return to the point that the company seldom, if ever, had been able to earn the rate of return before found to be reasonable.

The company had completed and put into operation, in the latter part of the test year, new facilities and other major improvements representing a large expenditure of new capital with a resultant depressing effect upon rate of return. These new facilities would be in operation during the full first year after the rates authorized by the instant decision, and, without establishing any precedent, the commission was of the opinion that the effect on the rate of return of the new pipeline and other facilities constructed should, in equity and justice, be considered.

This was done by recognizing and allowing for a substantial downtrend in the rate of return, which the commission estimated to be .50 per cent. The resulting 7.25 per cent return would therefore decline to 6.75 per cent, which the commission considered fair and reasonable for the future. *Re Southern California Gas Co. Decision No. 55642, Application No. 38787, October 1, 1957.*

Fuel and Tax Clauses Rejected as Commission Adds Trending Factor to Declining Return

THE California commission, in authorizing an electric company to increase rates, included a 0.12 per cent trending factor in the return allowance to offset attrition. The total return was 6.37 per cent, expected to decline to 6.25 per cent.

The commission did not look with favor upon automatic cost clauses proposed by the company as an alternative to meet the declining trend. In the past, pointed out the commission, fuel and tax clauses in rate schedules had been permitted principally to meet competitive conditions. Because of the anticipated favorable gas supply and its effect on composite unit fuel cost in the coming year, the commission saw no need for a fuel cost clause.

Possibility of Tax Adjustment

The commission increased the allowance for income tax expense to cover a contingency that might arise from a current tax court proceeding. The company had capitalized a flat percentage of administrative and general expenses for many years, but the Internal Revenue Service had recently ruled that a different amount should be capitalized. The commission agreed with the company's position that, since no one was able to predict the outcome of the current proceeding in the tax court, the company was obligated to provide for a contingency which might occur.

Accelerated Depreciation

The commission rejected, for the purpose of the rate proceeding, the company's proposal to take advantage of the accelerated depreciation option, under § 167

of the Internal Revenue Code, for tax purposes but to normalize income tax liability for regular accounting and ratemaking purposes. The company, however, was permitted to normalize income taxes as applied to accelerated amortization of defense facilities under § 168. The company had previously been authorized to normalize such taxes with respect to accelerated amortization for accounting purposes.

The commission refused to strike from the record the staff's evidence pertaining to higher rates of return using the "flow through" method of treating accelerated depreciation and amortization, commenting that the staff's computations might be considered in a supplementary order.

Rate Concessions

Depressed rates charged by the company in a city, under a lease agreement, were held unreasonably and unlawfully discriminatory in favor of industries located in such cities, when producing an inadequate return. The rates constituted prejudice to, and discrimination against, customers outside of, but similarly situated and comparable to customers in, the city, contrary to the public interest. The company was required to cease and desist from continuing to charge such lower contract rates.

The commission pointed out it had authority to abrogate a contract between a utility and a customer where the public interest so required. Although the commission does not pass upon the validity of a contract between a city and an electric company providing for rate concessions, it has authority to remedy prejudice and discrimination by preventing the company from complying with the terms of a contract providing for rate concessions in conflict with the public interest.

Rate Zones

The commission discussed at length the spread of the new rates among various classes of service. Lower electric rates applicable in an incorporated city or rate area were required to be applied within the boundary of such city or rate area as existing on the date the rates authorized became effective. In the case of new incorporations or annexations, the application of lower rate levels would be restricted to that portion of the area within the newly incorporated limits, including subdivisions under active development, having the general characteristics applicable for such lower rate level.

Agricultural Customers

The method of predicating a cost study on peak demands, commented the commission, does not give full credit for the off-peak nature of the load with respect to the system winter peak, for the purpose of fixing rates for agricultural use. Although the agricultural load causes summer peaks that are difficult for the company to serve, and the growth of the air-conditioning load may in time swing the system over to summer peaks, pending such change in system characteristics, some credit should be given agriculture for off-peak load. *Re Southern California Edison Co. Decision No. 55703, Application No. 38382, October 15, 1957.*

FCC Jurisdiction over TV Booster Station

THE United States court of appeals reversed a Federal Communications Commission cease and desist order directed at a television booster station servicing an isolated mountain town. The nonprofit organization operating the

booster station challenged the jurisdiction of the commission and, if jurisdiction be found, claimed that the commission had erred in failing to exercise its discretion to permit operation.

The situation was paradoxical to begin with. The rules and standards of the commission did not provide for the licensed operation of a booster station. The commission argued in its brief that the alternative to licensed operation was not unlicensed operation, but no operation. The commission thus said, in effect, that instead of serving the public interest by making reception available, it had no alternative but the ouster of the booster.

The court did not agree. The commission was held to have acted mistakenly in its belief that it lacked discretion to withhold the issuance of a cease and desist order until it had investigated the feasibility of making rules and providing for the licensing of booster installations. The commission was found to have jurisdiction over the operation of such a booster station, and, when a statutory violation had been shown, the power to revoke a station license, or impose a lesser sanction, like issuing a cease and desist order. By the same token, the commission could consider grounds offered in a complaint as to why a cease and desist order should not be issued.

The commission had erroneously decided that it did not have discretion in the matter of an unlicensed booster station, since the lack of a license constituted a statutory violation. The court did not decide whether the agency rule-making action with regard to booster stations had been unreasonably delayed, or that the commission's action was arbitrary. The court only held that the commission had acted mistakenly in its belief that it lacked discretion to withhold the issuance of a cease and desist order. *C. J. Community Services, Inc. v. Federal Communications Commission, 246 F2d 660.*

Interruptible Gas Customers Bear Fuller Share of Cost

In granting Chattanooga Gas Company a rate increase, the Tennessee commission approved a higher percentage increase for interruptible consumers than for other classes of customers.

Interruptible consumers had received benefits in the past through the availability of extremely cheap gas without bearing their proportionate share of the cost. They had received firm service during approximately eleven months of the year. Gross receipts taxes, among other factors, it was noted, had been applied upon total volume of sales, which narrowed the spread between out-of-pocket cost and revenue received for gas, thus placing the burden on other classes of customers to whom service was rendered.

It appeared that the readjustment of rate schedules under the proposed rates would result in a better relationship between revenues and cost of service. It would place the burden of cost in better balance among the various purchasers of gas. *Re Chattanooga Gas Co. Docket No. U-4004, August 28, 1957.*

Depreciation Ratios Held Erroneous

In granting a rate increase to a water company, which would produce a return of 4.34 per cent on the fair value rate base, the Pennsylvania commission

held the company's method of determining annual and accrued depreciation erroneous.

The company had based its estimates of accrued depreciation on the 4 per cent compound interest method. Ages were determined by the dollar-year method, and lives were estimated based on the ages and probable remaining lives, all relating to spot price trended original cost.

The company had determined accrued depreciation on the basis of the trended original cost at a certain price level and had used percentages derived therefrom to estimate accrued and annual depreciation on all other cost levels.

The commission considered it erroneous to estimate accrued depreciation by the 4 per cent compound interest method on the basis of the relationship of average age (derived by the dollar-year method) to average service life. Such average age fails to bring into play the compounding of interest over the correct period of time for each vintage, which is required when the 4 per cent compound interest method is used. The result is an understatement of accrued depreciation on trended original cost.

With respect to accrued depreciation on the original cost basis, the company's ratio had been developed with respect to spot price reproduction cost. This was also erroneous in principle.

It had been the commission's experience, because of the general rising price level that had obtained during the past forty and fifty years in the country, that where estimates of accrued depreciation were determined vintage by vintage, separately for original cost and trended original cost, the ratio of accrued depreciation applicable to original cost was always somewhat less than the ratio applicable to trended original cost. Accordingly, as a judgment matter, the commission estimated a lower accrued ratio applicable to original cost. *Borough of Pen Argyl v. Blue Mountain Consol. Water Co. C. 16653, August 19, 1957.*

Note Redemption Limitation Approved

In authorizing 25-year 5½ per cent notes to be issued by a telephone company, the North Carolina commission approved a 10-year limitation against redemption with lower-cost funds. This provision was not discussed beyond a usual finding that the issue was compatible with the public interest.

The proceeds will be used for plant improvement and enlargement. *Re North State Teleph. Co. Docket P-42, Sub 21, October 23, 1957.*

One Hundred Thousand Pounds a Month Not "Occasional Deviation"

The Virginia supreme court of appeals reversed a commission order extending a motor freight carrier's certificate of public convenience and necessity. The order would have allowed the carrier to deliver freight to a manufacturing plant located 1½ miles beyond its terminal.

Two points had been raised by a carrier contesting the commission's certificate extension—that the statute authorizing the commission to allow a carrier to make occasional deviations from its designated route did not encompass the activities of the other carrier, and that the commission had not given the appealing carrier an opportunity to correct any claimed inade-

quacies of the motor freight service.

The record showed that the freight carrier granted the certificate extension had been making monthly deliveries of 100,000 pounds of raw materials received from twenty-five or more suppliers, as well as supplies and parts necessary to keep the manufacturing plant in running condition. The 1½-mile deviations, held the supreme court, were frequent, not occasional.

As to the second point, the court held that the commission had no authority to extend the original certificate to allow deliveries to the plant beyond the carrier's terminal, without giving the appealing carrier, which had been assigned the territory in which the plant was located, an opportunity and reasonable time to correct any claimed inadequacy of service. *Mundy (General Motor Lines) v. Shelor (Floyd-Roanoke Freight Line) 99 SE2d 577.*

Certificated Operations over Fixed Routes Require Charge Of Highway Common Carrier Tariff Rates

In an action brought by the state of California against a trucking firm, the United States district court of appeal reversed a lower court's judgment and held the firm guilty of violating the code in that it charged less than the applicable tariff rates for highway common carriers.

The firm contended that although it was a certified highway common carrier authorized to transport freight as a public utility between certain points, it nevertheless could transport under the authority of a radial highway common carrier permit at rates fixed for other than certificated carriers. The firm thereupon stamped freight bills for such transportation as being charges under its radial highway permit.

The court, in refuting this contention, stated that a highway common carrier is one who transports property over public highways between fixed termini or over a regular route, while a radial highway common carrier does not operate over a regular route or between fixed termini as a public utility. The points and routes were "fixed" by the lumber firm's application for a certificate, the grant thereof, the filing of tariffs applicable to them, and the subsequent transportation between the points or over the routes.

The carrier cannot, therefore, transport at one and the same time products between fixed termini or over a regular route (highway common carrier) and between unfixed termini or over an irregular route (radial highway common carrier) over the same route or between the same points.

The two are mutually exclusive. The points and routes over which products were transported were fixed by its certificate. Operating as a highway common carrier and charging rates other than the applicable tariffs were violations of the code.

It was further pointed out that the fact that a precise hauling route traveled each distance is discretionary with the truck drivers and varies does not change the status from that of a certified common carrier to that of a radial highway common carrier. *People of State of California v. Geijsbeek, 314 P2d 21.*

"Necessity" Held Brother of "Convenience"

THE New Mexico supreme court, in affirming a lower court's judgment which set aside a commission grant of a certificate of public convenience and necessity to transport petroleum and petroleum products in bulk trucks and trailers over irregular routes and under nonscheduled service, commented at length upon the words "necessity" and "convenience." The court, in essence, held that both must be shown to justify the grant of a certificate.

The record disclosed no proof by competent and substantial evidence of the existence of any present need, or reasonably anticipated future need, for the applicant's services. Nor did the record disclose substantial evidence that the service of existing facilities was inadequate, or would be inadequate in the future, to meet the demands of the public.

The mere fact that the public might find additional service more convenient was not of itself sufficient to warrant the issuance of the certificate, said the court. Both the convenience of the public and the necessity for the proposed service must be considered.

"Necessity," as used in the statute, does not mean indispensably requisite. The commission is bound to consider whether the proposed service is necessary in keeping with the public policy of regulating utilities so that the public might be more efficiently served at lower cost than would be the case in the absence of such regulation.

The carriers involved had contended that they should be permitted to follow the changing source of supply of the particular commodity transported. This was not so, held the court, since a showing of public convenience and necessity must be made. The fact that a transportation facility has rendered service in one area or territory does not of itself entitle it to authority to operate in another area or territory in which reasonably adequate transportation facilities exist.

The terms "necessity" and "convenience" do not refer to the necessity and convenience of the carrier, but refer to the necessity and convenience of the public. *Ferguson-Steere Motor Co. et al. v. New Mexico State Corp. Commission et al. 314 P2d 894.*

Loss in Passenger Train Operations Cause for Discontinuance Despite Mail Interruption

THE South Dakota commission granted a railroad's application for authority to discontinue certain passenger trains operating at an out-of-pocket loss. To defray the railroad's operating loss, revenues from necessary freight services were used which, in turn, created the need for higher freight rates. The commission held this action to be a drain on the resources of the carrier and the resultant net deficit on the over-all system operations to be unreasonable and uneconomic.

It was further stated that a railroad should seek, and regulatory agencies should permit, elimination of passenger trains whose operation has become wasteful due to the fact that they no longer are needed or used by the public to any reasonable extent.

The commission, in allowing the discontinuance of the passenger trains which also furnished mail service, said that it had no authority to require a rail carrier to operate trains at a loss to carry mail

which is an exclusive function of the postal service. Petitioner proposed to handle the mail via highway post-office trucks. There was reason to believe that the government would utilize the remaining passenger trains for mail service or itself provide trucks and post-office service. Should such service prove inadequate or unsatisfactory, the public has a remedy by appeal to the federal government for improved service. *Re Chicago & N. W. R. Co. F-2484, September 21, 1957.*

Denial of Household Goods Carrier Certificate

THE Florida supreme court denied a petition to review a commission order denying an application for a certificate of public convenience and necessity to engage in common carriage of household goods. The court held that there had been sufficient evidence presented to the commission to justify a finding that public convenience and necessity did not require the issuance of a certificate to the applicant, which would have domiciled him in the same town as a carrier already holding a similar certificate.

The applicant had contended that a prior commission order converting the protesting carrier's "for hire" permit into a certificate without a separate independent hearing was illegal, and cited the Seaboard Airline case (16 PUR3d 139) to support his position. The court, however, felt that there was a clear distinction between the Seaboard holding and the present case.

In the Seaboard case, the commission order describing a "for hire" permit as a "limited common carrier certificate" had been completely without jurisdictional foundation for the simple reason that the document was merely a "for hire" permit, despite the error in the notice of the hearing which had described it as a "limited common carrier certificate."

In the instant case, the reclassification of all of the "for hire" permits in existence had been accomplished after full public hearings participated in by many carriers and pursuant to public notice.

The distinction between the instant case and the case cited as authority for reversal, in the court's opinion, was that in the matter now under consideration, the limited certificate for the common carriage of household goods had been issued only after a full and proper hearing. In the Seaboard case, the holder of the "for hire" permit had attempted to convert it into a certificate of limited common carriage merely by changing its name. *Teague et al. (Teague Brothers Transfer & Storage Co.) v. King, 96 So2d 796.*

Franchise Tax Burden Restricted to City Limits

IN authorizing Cortez Natural Gas Company to construct facilities and provide natural gas service in the city of Dolores and adjacent territory, the Colorado commission was called upon to rule on the incidence of a municipal franchise tax on gross receipts. The city of Dolores sought, in effect, to apply the tax to customers outside the municipal limits as well as within. The commission was not agreeable to this arrangement.

It is contrary to good regulatory practice to permit a municipality to charge a tax outside of its municipal limits where the utility will be operating under a certificate from the commission, the opinion

declared. The company should not be required to collect taxes from people residing outside the town of Dolores to be paid over to the municipal government.

The franchise tax was made equal to 2 per cent of gross revenues for the first year, 4 per cent for the second year, and 5 per cent for the third. While the commission recognized a franchise tax as a legitimate charge, it was unable to find any justification for the automatic escalation of this tax.

The state commission indicated its reluctance to encourage high franchise taxes unless a need be shown for them. If the utility is to become a collection agency for the municipality, said the commission, then the municipal customers should be fully informed in regard to the taxes they are required to pay.

Accordingly, the charge on customers residing beyond the corporate limits was disallowed and the tax within the corporate limits was required to be surcharged on each bill sent to municipal customers "in order that there be no misunderstanding in the future as to the amount or nature of the tax." *Re Cortez Nat. Gas Co., Inc. Application No. 15613, Decision No. 48832, October 3, 1957.*

Other Recent Rulings

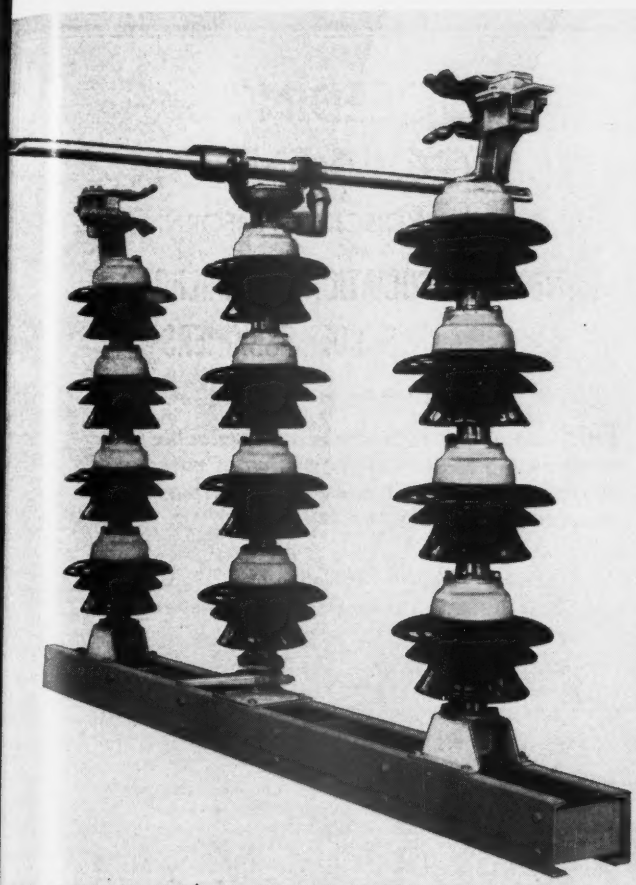
Railroad Crossing Signs. The supreme court of Ohio held that a railroad has no duty to provide extrastatutory warnings at a grade crossing where they are not required by commission order and there is no substantial risk that a driver, in the exercise of ordinary care, may be unable to avoid colliding with the train being operated over the crossing pursuant to statutory requirements. *Hood v. New York, C. & St. L. R. Co. 144 NE2d 104.*

Additional Carrier Authority. The New Mexico supreme court held that a decrease in revenue or sharing of tonnage by existing motor carriers would not in itself defeat an application by another motor carrier to furnish additional service. *Garrett Freight Lines, Inc. et al. v. New Mexico State Corp. Commission et al. 312 P2d 1061.*

Railroad Station Discontinuance. The Wisconsin commission denied a railroad's application for authority to discontinue agency station service and to eliminate the station from all except carload freight tariffs, because of the delay and inconvenience to patrons due to the distance to adjoining stations. *Re Chicago & N. W. R. Co. 2-R-3215, August 27, 1957.*

Municipal Plant Return. The Wisconsin commission held an increase in municipal plant water and sewer rates which would yield a 5.5 per cent return was reasonable and necessary to meet the financing of proposed revenue bonds and the amortization thereof. *Re Village of Mazomanie, 2-U-4818, August 30, 1957.*

Telephone Rate of Return. The Wisconsin commission ruled that a rate increase which would yield a 6.2 per cent return on a net book value rate base was reasonable for a telephone company converting to dial service. *Re Buffalo County Teleph. Co. 2-U-4807, August 30, 1957.*



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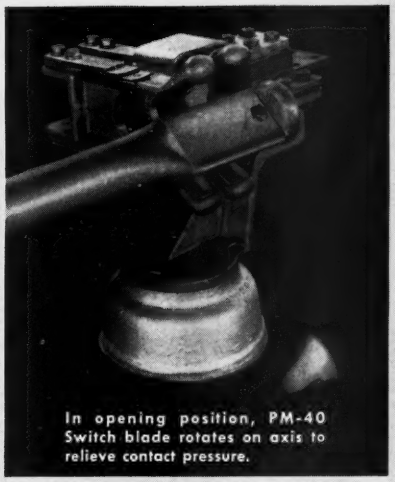

In opening position, PM-40 Switch blade rotates on axis to relieve contact pressure.

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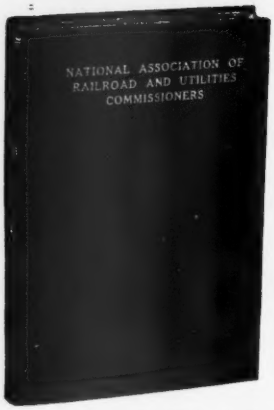

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Industrial Progress

&E Receives Giant Electronic Data Processor

IANT electronic computer, capa- of turning out 100,000 customer a day, was delivered to Pacific and Electric Company recently an Francisco, Norman R. Suther- president and general manager, unced. The IBM 705, an 18-ton allation, will be the largest of its west of the Mississippi.

fter a gradual change-over from ent billing operations lasting about and one-half years, the data essing machine will prepare near- million customer bills per month will handle all related records, Sutherland said. Despite this big gnment, the 705 operates at such d that the company plans to have available for computing of engi- ing and other problems. The great city of this equipment also will for future company growth, Sutherland said.

he 705 will be installed on the top of PG&E's recently-acquired t-story Mission street office build- at Fremont and Mission streets an Francisco. The 177,000 square- building is being remodeled for &E occupancy.

fter installation and testing, the next Spring will begin taking over ng for the Company's San Fran- o division, and by early 1960 all f the Company's divisions will be dled by the new equipment.

New Literature On Atomic Industry

E Atomic Industrial Forum has ounced the availability of papers m sessions of its recent conference "The 1957 Nuclear Industry." The ers, aimed at a technical and man- ment audience, cover 20 primary as of interest to individuals in- ved in nuclear development today, or those who are planning activity in this field in the future.

The subject areas for which sets of papers are available include: Research and Test Reactor Progress, Uranium Production, Radiation Applications, Appraisal of the Atomic Industry, U. S. Power Reactor Experience, Reactor Fuel Reprocessing, Instrumentation Responsibilities, Financing, U. S. Power Reactor Program in Review, Reactor Fuel Manufacture and Handling, Progress in Nuclear Standardization, Legal Problems, Atomic Activities Outside the United States, Reactor Components and Accessories Manufacture, Economic Incentives in the Nuclear Industry, Information and Training, Factors Affecting Power Reactor Construction, Marketing, Financial Protection Against Nuclear Liability and Advanced Reactor Concepts. An average of 5 individual papers are listed under each subject area.

A complete conference paper catalog is available from the offices of the Atomic Industrial Forum, 3 East 54th Street, New York 22, New York.

New Sales Promotion Awards Announced by EEI

THERE are twelve new Sales Promotion Awards offered this year by Edison Electric Institute for exceptional achievements in building load in four markets: residential, farm, commercial and industrial. These new Awards take the place of those previously administered by EEI which were primarily concerned with specific appliances and selective markets. The new Awards follow naturally the current trend of utilities in promoting the electric way of life to their customers and devoting their efforts to profitable load building.

There are three Awards each in the residential, commercial and industrial market contests, based upon total number of customers. Three Awards are available in the farm market contest, based upon the number of farm customers. This means that all companies—regardless of size—can enter the contests with equal chances of winning. Companies may enter any one or more of the contests. Deadlines for 1957 entries are February 1 and 15, 1958.

Brochures covering the new Awards have been mailed, but additional copies may be procured by writing to Secretary, Awards Committee, Edison Electric Institute, 420 Lexington Avenue, New York 17, New York.

Stoudt Named Manager Nuclear Energy Division Gilbert Associates, Inc.

JAMES R. STOUDT was appointed recently as manager, Nuclear Energy Division of Gilbert Associates, Inc., design engineers and consultants in the electric power industry. Mr. Stoudt will be located in Reading, Pa. where, as a consulting engineer since 1946, he has been in charge of Gilbert Associates' engineering and economic studies and surveys into the nuclear energy field for both utility clients and the Atomic Energy Commission.

In announcing the appointment, L. D. Staver, president, said "the application of nuclear energy to the older science of the production of electrical power is developing to the point where wide use of the services of independent consulting engineers of power production experience is being required in the utility industry. Consequently, Gilbert Associates has organized its staff of nuclear engineers on the division basis to bring about through coordination with the other divisions dealing with conventional power specialties, a more effective service to each client."

(*Continued on page* 30)

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Tax-Exempt Bonds on a Bargain Basis

IT has been 22 years since you could command as much tax-free, take home income as is now available from state, municipal, revenue and other tax-exempt bonds.

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Clary Literature Describes Digital Recording Equipment

NEW literature describing the complete line of Clary digital recording equipment is available from Clary Corporation, 408 Junipero street, San Gabriel, California.

The three-color, six page brochure, designated SA-81, describes Clary's tape punch, print-punch, scanning printer, printer-perforator combinations, time data printer, printing input keyboard and standard data printer machines.

According to the company, this electronic equipment is widely used for production testing, weighing applications, laboratory instrumentation, computer data read-out and input, data-reduction systems, process control logging systems and office, industrial and merchandising automation.

Stone & Webster Names Claxton In Nuclear Projects Division

CHARLES R. CLAXTON, who has worked on atomic energy projects for Stone & Webster Engineering Corporation since 1954, has been named assistant chief engineer of the firm's Nuclear Projects Division.

Fred W. Argue, vice president and engineering manager, said that Mr. Claxton has been project engineer in charge of the architect-engineering services being supplied by Stone & Webster to Westinghouse Electric Corporation in connection with the design of the Pressurized Water Reactor project at Shippingport, Pa.

Prior to joining Stone & Webster in 1941, Mr. Claxton was a chemical engineer with the Texas Company in Port Arthur, Texas, and the Stanolind Oil and Gas Co., of Tulsa, Okla.

Since then he has worked on many Stone & Webster projects in the U. S. and Britain in the design of chemical and petroleum plants.

New 1958 Portable Electric Tool Buying Guide

A 30-PAGE 1958 buying guide describes 70 portable electric tools and kits with over 400 accessories for utility and maintenance crews, builders, carpenters, heating, plumbing and air conditioning contractors. This buying guide includes over 150 pictures of tools and their uses with complete specifications and prices for electric saws, sanders, drills, planes, routers, shapers, and combination tools. Without obligation write for Buying Guide 105, Porter-Cable Machine Company, 118 Exchange street, Syracuse, New York.

Hassall Offers "Made to Or Marking Nails

JOHN HASSALL, Inc. offers "m to order" marking nails for such poses as identifying company or ernment property; indicating ins tion dates of items such as teleg poles; distinguishing company p ucts; marking items such as scr for locating purposes, and for a riety of other uses.

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B&W to Supply Boiler fo Duquesne Light Plant

THE Babcock & Wilcox Comp will furnish the boiler for a $30- lion steam electric generating un be installed by the Duquesne L Company at its Elrama, Pa., po station.

Planned as part of an over-all tion expansion and improvement gram, the huge steam generator be the largest ever erected in wes Pennsylvania. It will be housed structure rising to a height equiva to a 20-story building, and wil about 60 feet higher than the exis plant it will adjoin.

The boiler for this mammoth will have a maximum continuous put of 1,300,000 pounds of steam hour. Designed for a pressure of 2 pounds per square inch, the boiler operate with a pressure of 1 pounds per square inch at the su heater outlet with both steam temp ture and reheat temperature at degrees F. B&W also will build pulverizers for the boiler, which burn approximately 75 tons of hourly.

When the giant steam generator gins operating during the winter 1959-60, it will supply steam to a 1 000 kilowatt turbine generator, largest in western Pennsylvania. F the standpoint of both size and trical power generating capacity, station will be the biggest plan Duquesne's system, which serves

(*Continued on page 32*)

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…nd like a claim Dodge can't back up? Mister, …couldn't be further off base. These all-new …ge '58 *Power Giants* are the most outstanding …ks in our 40-year history.

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3. First in Economy! Exclusive Power-Dome engine design reduces harmful carbon deposits. You get better gas mileage . . . cut upkeep costs way low.

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proximately 456,000 Duquesne customers in Allegheny and Beaver counties.

Located along the Monongahela river four miles above Clairton, Pa., the Elrama Station's three present units have a total generating capability of 324,000 kilowatts. Three B&W Radiant Boilers are currently in service at the station.

Construction of the new addition is expected to begin as soon as the preliminary engineering is completed by Stone & Webster Engineering Corporation, of Boston, engineers and constructors for the project.

Instrumentation and Control of Nuclear Plants Explained In New Westinghouse Booklet

A NEW 8-page booklet "Instrumentation and Control of Nuclear Plants" is now available from Westinghouse Electric Corporation. Illustrated with many actual control photographs and system schematics the booklet covers in detail: Reactor Power Control, Reactor Nuclear Instrumentation, Reactor Coolant Instrumentation and Radiation Monitoring.

For a copy of booklet B-7233, write Westinghouse Electric Corporation, P. O. Box 2099, Pittsburgh 30, Pa.

Two Generators Scheduled for Florida Power and Light Company

WESTINGHOUSE Electric Corporation has received a multimillion dollar order for two 240,000-kw turbine-generators for Florida Power and Light Company. Scheduled for delivery in 1960 and 1961, the units will be installed at a new plant site near Port Everglades, Hollywood, Fla.

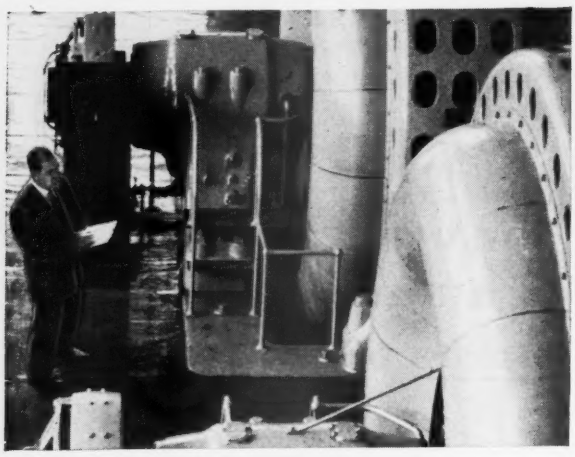
Citing the vigorous industrial and population growth in the state, McGregor Smith, chairman of the board of Florida Power and Light said that more than 400 new industries had been established in Florida during 1956 alone, and that new customers were added to Florida Power and Light's lines at the rate of 1000 a week.

These additions to generating capacity are part of the biggest long-range expansion project ever undertaken by Florida Power and Light. Originally set at $332 million in 1951, the estimates were increased to $435 million in 1955 and will reach $496 million for the 10 year period ending in 1961.

"The net result of this expans Mr. Smith said, "is that by 195 generating capacity will be incr 64 percent over 1956. This means in just three years we will have a generating capacity equa to al power plant capacity in Florid V-J Day, including both publicly privately owned plants." This 64 cent increase does not include 480,000-kilowatt addition repres by the two units just ordered. W these generators go into opera the total capability will stand a 108 percent higher than 1956.

Canadian NRU Reactor In Operation

ATOMIC Energy of Canada Li has announced that the NRU re has gone into operation at Chalk Ontario. The start-up culminate years of intensive effort in design gineering development and cons tion. The reactor will be operat low power for several weeks, d which time a series of test ex ments will be carried out. The p will then be increased to the rate pacity of 200,000 kilowatts the This rated capacity is approxim



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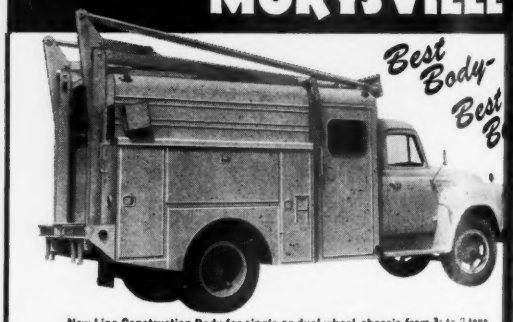

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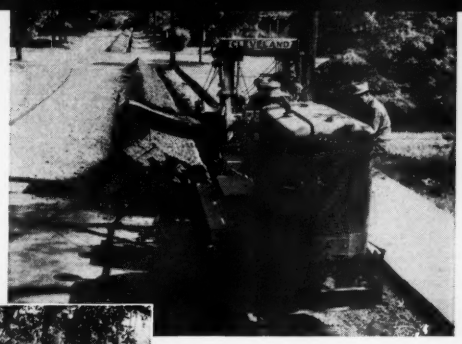
times as great as the capacity of NRX reactor which has been in ation for the past ten years.
he NRU reactor is a triple-pur- reactor and this has contributed gly to the complexity of its design to its cost. The reactor will pro- the research, testing, and experi- tal facilities required for the de- ment of nuclear power; it will duce plutonium; and it will pro- radioactive isotopes.
s a tool for research, engineering lopment and testing, the NRU re- will be unsurpassed. Its neutron is approximately five times as t as that of the NRX reactor. No known reactor has such a high ity of neutrons combined with a large capacity for experiments. makes possible the testing of any element assembly that is now be- considered for nuclear power ts. Because of this, the NRU re- will be used extensively for ying out loop experiments similar ose which are now under way in NRX reactor. Some of the loop eriments in the NRX reactor have joint projects with the United es Atomic Energy Commission with the United Kingdom Atomic hority. These agencies have al- y asked for testing space in the U reactor. Inquiries have also been ived from certain other countries.
he NRU reactor will produce sub- tial quantities of plutonium which be sold to the United States mic Energy Commission. It will produce a larger supply of the ous isotopes—notably Cobalt 60— ch are now being used widely in arch, industry and medicine.
he moderator of the reactor and primary coolant is heavy water; uel is natural uranium. This is the tor technology which Canada has neered successfully with the NRX tor and which offers very good spects for economic nuclear power. nique feature of the reactor is the hod of changing the fuel elements. ereas the NRX reactor and other power research reactors must be t down to change fuel elements, NRU reactor can be refueled out a shutdown. The fuel-ele- nt-changing machine weighs 240 s.
The NRU reactor, which has cost roximately $57 million, has been igned entirely in Canada and all ts components, with the exception he heat exchangers, have been sup- d by Canadian manufacturers. er one hundred Canadian com-

(*Continued on page* 34)

DIGS STRAIGHT



DIGS CLOSE

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Etowah Construction Company uses its Cleveland 95's compactness and shiftable conveyor to advantage on this utilities job in Franklin, Tennessee.

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panies have been employed on the fabrication of components for the reactor.

Gas Air Conditioning Round-Table

THE Southern Gas Association Eastern Area Gas Air Conditioning Sales Round-Table Conference was held in Birmingham, Alabama, on November 1st. The meeting, chairmaned by William P. Harvey of the Mississippi Valley Gas Company, was attended by twenty-five delegates from twelve different companies.

A number of special reports were given at the meeting. One was a discussion of the Arkla-Servel new sales program by W. G. Wepfer, sales manager of Arkla-Servel. R. R. Suttle, managing director of the Southern Gas Association, reported on the activities of the S.G.A. Committee on Heating and Air Conditioning. Mr. Suttle was followed by S. F. Wikstrom, director, promotion and advertising of the American Gas Association, who reported on the activities of the A.G.A. Air Conditioning Promotion Committee. In addition to these reports, the following topics were included on the agenda for discu architects and consulting engi gas motor air conditioners; heat conditioners; dealer relations; techniques.

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Hotpoint Forecasts 10-ye Major Appliance Marke

THE major electric appliance i try will ship about 286,000,000 appliances to the marketplace i next 10 years.

That's the prediction of Ho Co., who recently released its a 10 year forecast on major appli The company releases such inf tion for its dealers and distrib to depict industry growth and f sales potential.

The forecast shows that the i try will ship to the market in the 10 years, 9,200,000 electric ra 10 700 000 built-in appliances, 700,000 refrigerators, 10,500,000 freezers, 27,700,000 air conditio 7,900 000 electric water heaters 400,000 dishwashers, 8,500 000 waste disposers, 38,000,000 cl washers, 16 000,000 electric cl dryers, 10,300,000 combin washer-dryers, 53,200,000 black white TV receivers and 43,10 color TV receivers.

Total value of the industry ments to the marketplace would ex $85 billions in the 10 year period January 1, 1958 through Dece 31, 1967.

High Speed Computer Wo On Atomic Power

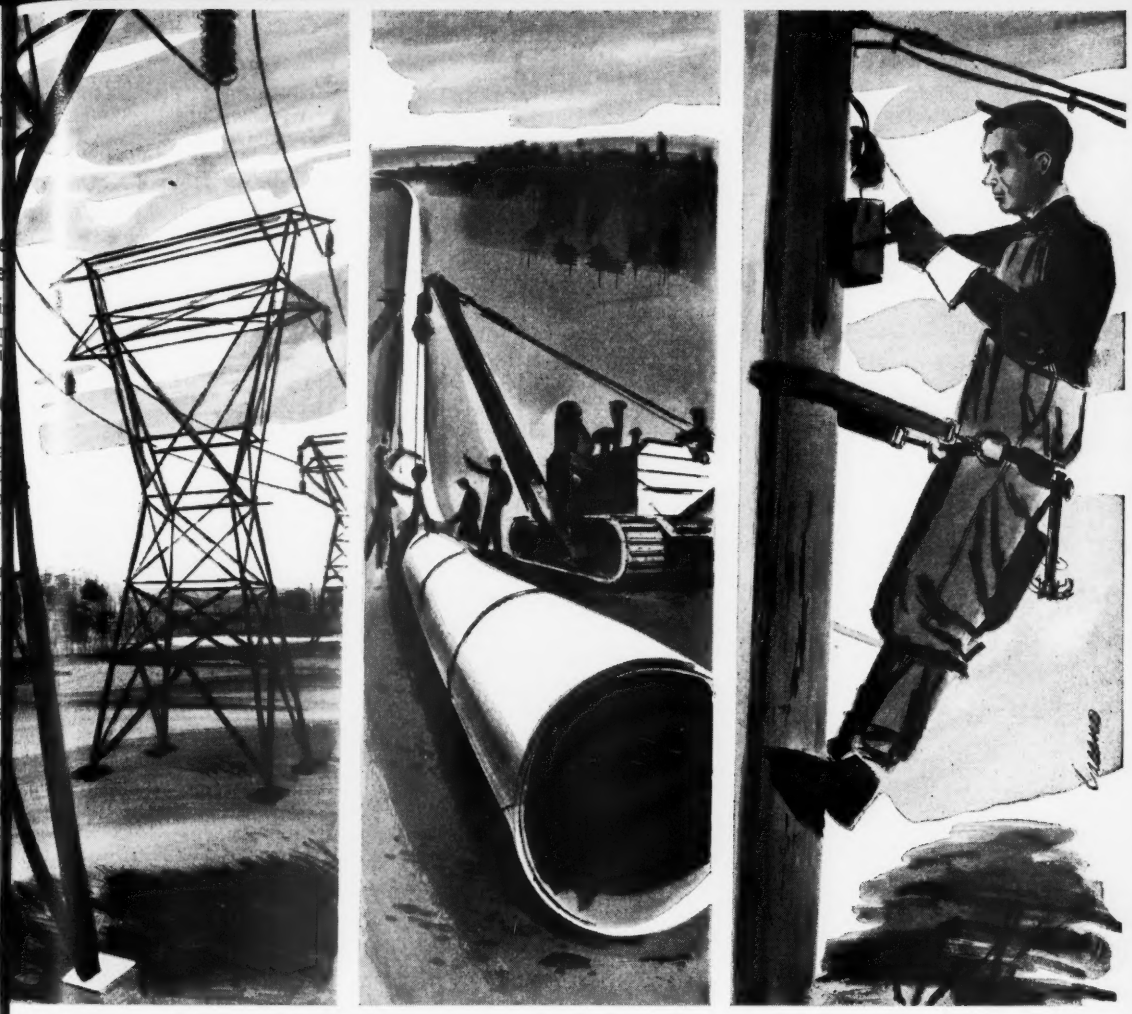
AN electric computer that on electricity produced by at power, and in turn helps scien learn new facts on how to pro atomic power better, now is in op tion at Argonne National Laborat Lemont, Illinois.

Built and designed by Argonne new computer has been christ "GEORGE," so Argonne mathe ticians will be literally let GEORGE do it when they pre this new machine with problem solve.

Since Argonne generates much its own laboratory electricity with Experimental Boiling Water Reac GEORGE may well be one of first electronic computers to atomic power.

GEORGE is a high-speed dig machine capable of making 200 separate additions of numbers a

(*Continued on page* 36)



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ond. A maze of electronic tubes, magnetic cores, wire and other parts, it is compact enough to be fitted into the average-sized living room. It runs on ordinary house current, at 115 volts. It is the first of three new electronic computers to be installed by Argonne.

The new machine, which was designed to perform scientific computations and mathematical reductions of research data, has been a laboratory work horse since its superseded an older Argonne computer, AVIDAC, this fall.

"We could set GEORGE to work playing chess, figuring out the orbit of a satellite, or picking out the probable winners of next week's football games," said Donald A. Flanders, head of the Argonne Applied Mathematics Division.

"However, we have so much to do—computations aiding basic research into the nature of matter—that we had to utilize the machine immediately for work at hand."

The design, development, and final construction of GEORGE took three years of coordinated effort on the part of Argonne's mathematicians and engineers. The cost was approximately $303,000, about one sixth the cost of comparable commercially produced machines. This figure, however, does not include developmental work and time spent by regular salaried laboratory personnel.

The design and early phases of construction of GEORGE were initiated by three former members of the Argonne staff, J. C. Chu, Raymond F. Kramer, and Jean F. Hall. Dr. Chu was in charge of the design and construction of AVIDAC, Argonne's first high speed computer. During World War II Chu was an engineer on the design and construction of ENIAC which was built at the University of Pennsylvania and was the first electronic digital computer ever structed.

Four members of Argonne's tronics Division were responsible the final phases and construction GEORGE. They are Loren R. Co David H. Jacobsohn, Stanley C. son, and Thomas Brill, who is Electronics Division's director.

A problem for GEORGE gene originates with one of the Laboratory's scientists who proposes the ticular situation to be attacked Argonne mathematicians. An ana to reduce the problem to a pr mathematical form is then carried Next the mathematicians decide a "program" of instructions for computer. This program is a det set of orders which determine ste step what operations the machine perform.

(*Continued on page 37*)

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$40,000,000

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November 21, 1957.

he program of instructions, along any numerical data relevant to problem, is punched in coded form paper tape. (This resembles the ched paper tape used by a teletype hine.) The punching process is led out on auxiliary equipment not tly coupled to GEORGE.

e program and data are "read the computer by passing the ched tape through a photo-elec- reader. With everything set up, ORGE can then proceed auto- ally from order to order.

he machine may be instructed to matically repeat a portion of its uctions for each of several differ- numbers that are read into it. It may be ordered to skip a part of the instructions if a certain condition is satisfied, but to continue on to the next order if that condition is not satisfied.

GEORGE will operate automatically, skipping and repeating orders where necessary, until the instructions that have been read into it are satisfied. (The process of repeating orders is called a "loop.") Results come out on coded paper tape which can be run through an especially altered electric typewriter which prints them in tabular form.

The new Argonne computer has four principal parts: a ready-access memory composed of thousands of tiny magnetic cores, an arithmetic unit, a set of automatic controls, and a console where the operator sits with equipment for reading information into and out of the machine.

The arithmetic unit is that part of GEORGE in which elementary arithmetic operations are carried out. The program, numerical data, intermediate results, and final results are stored in the memory component. The automatic controls supervises GEORGE operations, timing the flow of information, and carrying out the instructions in the program.

GEORGE was based on the older AVIDAC, which has been retired from service, but has an improved type of electronic memory with speedier access to stored information, greater information capacity, and less possibility of mechanical error. It is also a two-address machine, meaning that an instruction can refer to two different locations of data in the memory and can use one of these locations more than once.

The new computer uses the binary arithmetic system as opposed to the standard decimal system. Each of the tiny magnetic cores in its memory can distinguish between "1" and "0." Any number can be expressed in this computer language. The number 37 in the decimal system, for example, is expressed by 100101 in the binary system.

GEORGE can handle 4,096 numbers (termed "words") of 40 binary units, or "bits," each equivalent to about 12 decimal digits, in its ready-access core memory.

Projected for installation with the computer in 1958 is an auxiliary memory unit, consisting for four wide magnetic tapes each of which will carry 42 columns or tracks of data. This memory will have a four million word capacity which can be doubled by the addition of more tapes and recording-playback units. The auxiliary tape memory unit of GEORGE will be similar to a unit built by Argonne for installation with ORACLE, a computer at the Oak Ridge, Tenn., Institute for Nuclear Studies.

The computer is a complex arrangement of parts, with 3,500 electronic tubes, 3,000 diodes (crystals), 20,000 resistors, 1,000 condensors, and ten miles of electrical wire. The ready-access memory, with its switching equipment, has 182,784 magnetic cores.

To keep parts from overheating during operation, the computer has enough air conditioning equipment to cool 15 homes.

This is not an offer of these Securities for sale. The offer is made only by the Prospectus.

EW ISSUE

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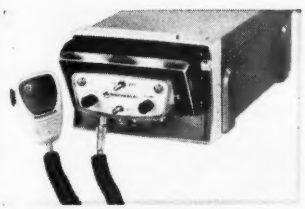

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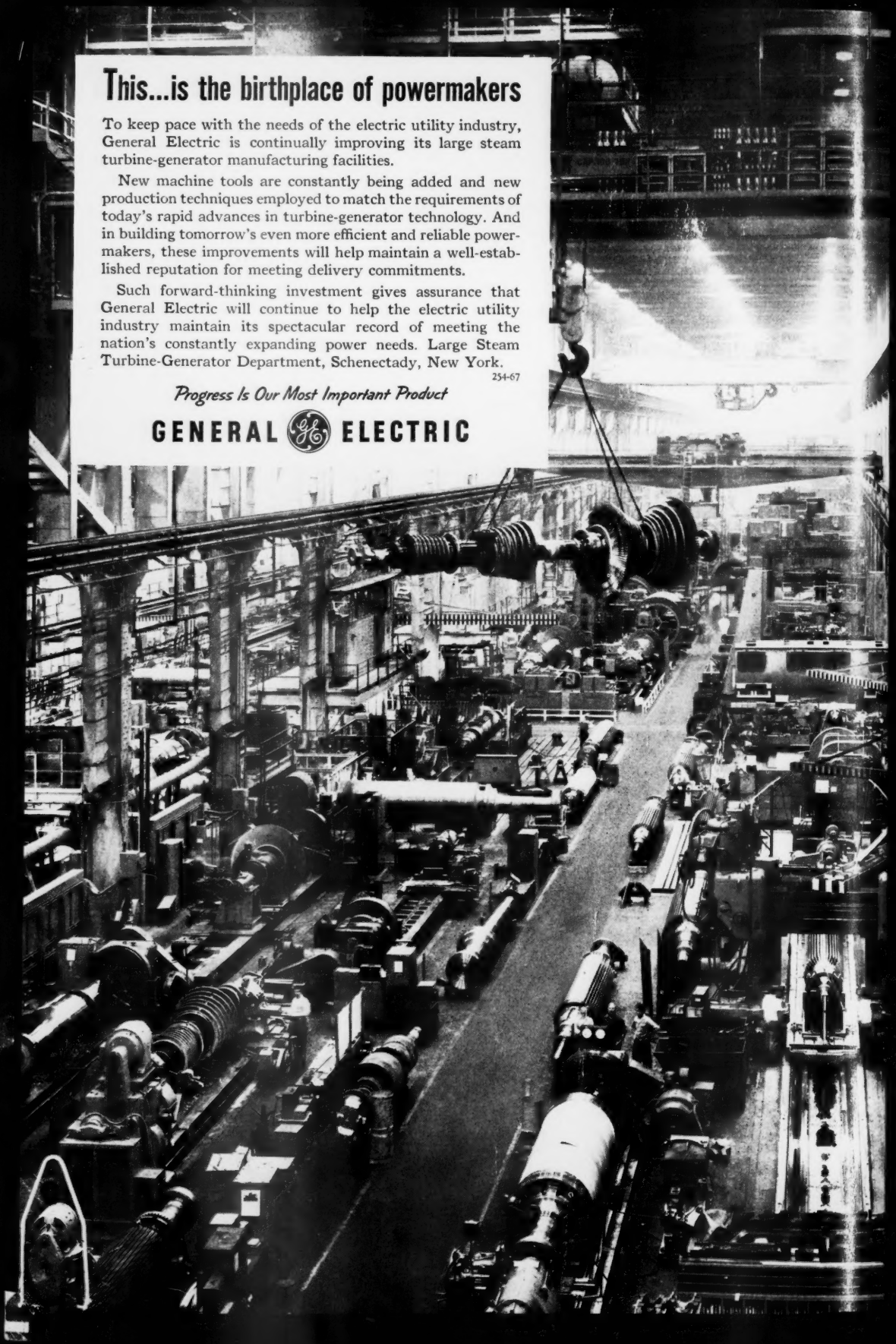
Because PRIVATE-LINE radio is quiet except when receiving a call from another radio in your own system, you eliminate all the "channel chatter." It's much like having the frequency all to yourself. You benefit by reducing the number of missed or misunderstood messages . . . operator fatigue is reduced . . . overall efficiency is increased.

Dual-Squelch PRIVATE-LINE radio gives you these basic features . . . and more. Now you can make a gradual changeover to PRIVATE-LINE operation. During the transition period, your messages can be received by both Motorola conventional and PRIVATE-LINE radios. No longer is it necessary to make the complete changeover to PRIVATE-LINE operation at the same time. And with the new Dual-Squelch operation, you can have manual selection or optional automatic monitoring of the channel before transmitting.

Before you select your 2-way radio, you'll want to investigate Motorola Dual-Squelch PRIVATE-LINE radio.

MOTOROLA PRIVATE-LINE RADIOPHONE

MOTOROLA Communications & Electronics, Inc., A Subsidiary of Motorola, Inc., 4501 Augusta Boulevard, Chicago 51, Illinois



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To keep pace with the needs of the electric utility industry, General Electric is continually improving its large steam turbine-generator manufacturing facilities.

New machine tools are constantly being added and new production techniques employed to match the requirements of today's rapid advances in turbine-generator technology. And in building tomorrow's even more efficient and reliable powermakers, these improvements will help maintain a well-established reputation for meeting delivery commitments.

Such forward-thinking investment gives assurance that General Electric will continue to help the electric utility industry maintain its spectacular record of meeting the nation's constantly expanding power needs. Large Steam Turbine-Generator Department, Schenectady, New York.

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